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1955/56

SAN DIEGO STATE COLLEGE

Catalog and Announcement Of Courses

THE GREAT SEAL OF THE STATE OF CALIFORNIA

FOR THE YEAR 1955-1956

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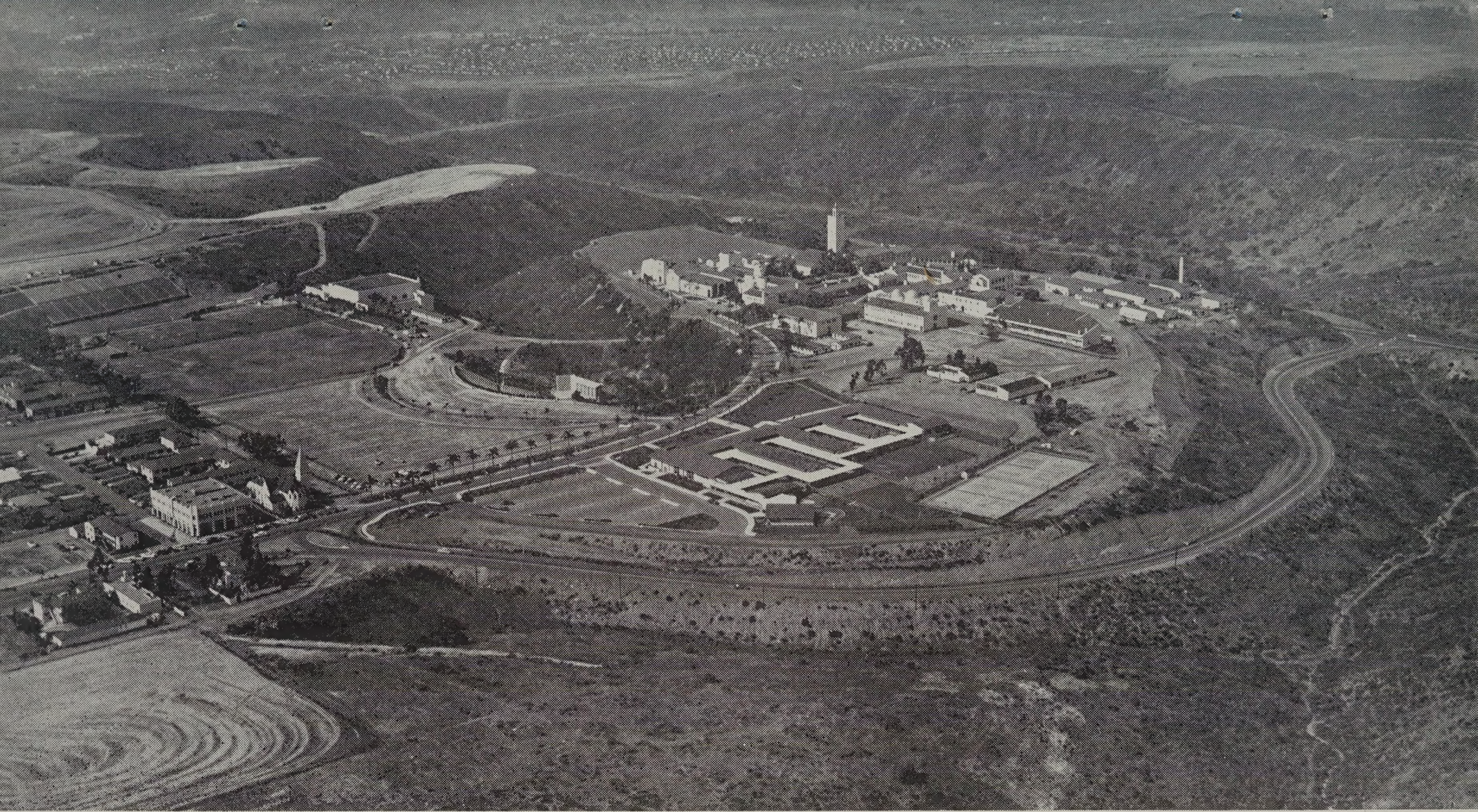
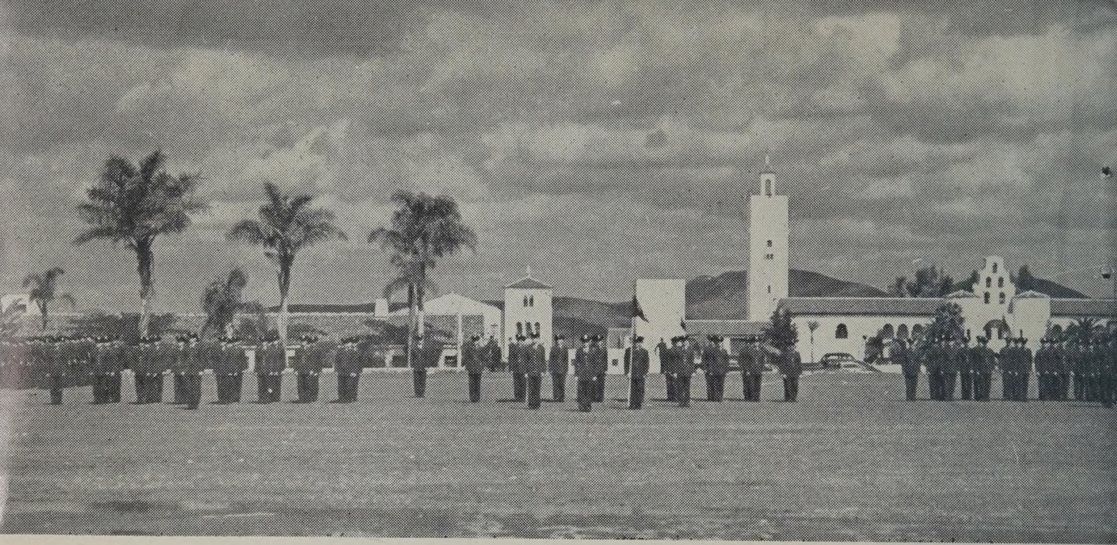


Aerial view of the San Diego State College 285-acre campus. The master building program calls for 17 additional structures to be erected on the site.



Students who take part in the Air Force officer training program become second lieutenants upon graduation from college. The campus architecture reflects the Spanish-Moorish influence, as can be noted by buildings in background.

Students planning a career in teaching find that the college's laboratory school offers many opportunities for observation and directed teaching

Engineering students have a choice of seven study areas in which to specialize while working toward their degrees

Studies in the fine arts enable students to use a variety of forms to express themselves artistically

About five miles of shelving is needed to hold the 165,000 volumes found in the well-equipped San Diego State College library

Speech arts students can learn all phases of play production through the series of dramatic productions that are staged on campus each year

Catalog

and

ANNOUNCEMENT OF COURSES

VOLUME 42

APRIL, 1955

SAN DIEGO STATE COLLEGE

SAN DIEGO, CALIFORNIA

THE LIBRARY OF THE
JUL 8 1955
UNIVERSITY OF ILLINOIS

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TO REMOVE, CUT ALONG THIS LINE

SAN DIEGO STATE COLLEGE
SAN DIEGO 15, CALIFORNIA

APPLICATION FOR ADMISSION FOR 1955-1956

This Application Must Be on File at Least Four Weeks Before Registration
(Refer to the Calendar in This Catalog for Specific Dates)

NAME IN FULL ____________________
Last name First name Middle name (Mr., Miss, Mrs.)

LOCAL ADDRESS ____________________
Street City Zone State Telephone

PERMANENT ADDRESS ____________________

I plan to enter the college in the term beginning ____________________, 1955-56
Fall or spring

Check only one: I will enroll in the regular program ☐ Extended day only ☐

Students who do not plan to enter the college in the next Fall or Spring term but wish an evaluation of credits only MUST NOT use this form. Write for the REQUEST FOR EVALUATION form. Students who expect to begin work in the Summer Session and continue into the Fall term must request a Summer Session Application form, in addition to this regular Application for Admission form.

PERSONAL INFORMATION

Age at last birthday ______ Date of birth ______ Place of birth ______

Are you a U. S. citizen? ______ If not, of what country? ______ How long in the U. S.? ______

Married? ______ Name of husband or wife ______ Address ______

Were you in military service? ______ Active duty dates ______ Highest rank ______

If under age of 21, name of legal guardian ______ Address ______

Mother's name ______ Address ______

Mother's occupation ______ Place of birth ______

Father's name ______ Address ______

Father's occupation ______ Place of birth ______

SCHOOL AND COLLEGE HISTORY

Name of your high school ______ Place ______ Date graduated ______

Have you ever attended any college? ______ Approximate semester credits to date ______

Have you ever attended San Diego State? ______ Your name at that time ______

List all institutions of collegiate grade attended, whether or not credit was earned:

Institution	Location	Dates of attendance	Degree	Date
______	______	from ______ to ______	______	______
______	______	from ______ to ______	______	______
______	______	from ______ to ______	______	______
______	______	from ______ to ______	______	______

Have you ever been dismissed from an educational institution because of unsatisfactory scholarship? ______ For unsatisfactory conduct? ______ If so, in either case, give name of institution, date of dismissal, and statement as to whether you are now eligible to return to that institution: ____________________

CERTIFICATION

I certify that to the best of my knowledge the above information is complete and correct. Date ______ Signature of applicant ____________________

Fill in Other Side of This Form

TRANSCRIPTS OF RECORD

Are all official transcripts for schools and colleges which you have listed now on file in this college?______ If not, have official transcripts of record from the high school of graduation or last in attendance and from EACH college attended (including correspondence or extension courses) sent directly from that school or college to the Admissions Office, San Diego State College. Veterans must also send a photostat of the military separation form DD-214 (or equivalent record). Transcripts presented by the student are unofficial records and will not be accepted. All records received become the property of the college and will not be returned. All transcripts must be on file with the Admissions Office at least four weeks before registration if the student wishes to avoid late registration.

SELECTION OF COLLEGE CURRICULUM

What is your occupational goal?______

Are you a candidate for a degree or teaching credential at this college?______

If so, name the degree and/or credential.______ ______
Degree Credential

Check Only One of the Curricula Listed Below

ARTS AND SCIENCES CURRICULA
Undergraduate

Check

______A.B. degree
  Major______ Minor (if any)______
  ______(Check if major is undecided)

______B.S. degree
  Major______ Minor (if any)______
  ______(Check if major is undecided)

______Not a candidate for a degree at this college. Major______

______Preprofessional (not a degree program)
  ______Predental
  ______Prelegal
  ______Premedical
  If you wish to continue on to a degree at this college, complete the following:
  Major______Minor______Degree______

______Certificate (not a degree program)
  ______Public administration certificate
  ______Public welfare administration certificate

TEACHER EDUCATION CURRICULA
Undergraduate

Check

______A.B. degree with kindergarten-primary credential. Minor in______

______A.B. degree with general elementary credential. Minor in______

______B.Ed. degree with general elementary credential (open only to teachers in California public schools)

______B.V.Ed. degree (open only to California vocational teachers recommended by the Board of Examiners)

______A.B. degree with junior high credential with minor in home economics or industrial arts.
  Major______ Minor______
  (Home Ec./Ind. Arts)

______A.B. degree with special secondary credential. Major______
  Minor (if any)______

______A.B. } Degree leading to the general sec-
______B.S. } ondary credential
  Major______ Minor______

______Psychometrist credential

GRADUATE LEVEL (FOR STUDENTS WHO HOLD A BACHELOR'S DEGREE)

Check

______General secondary credential
  Major______ Minor______

______One of the credentials named above (other than the general secondary)
  Name the credential: ______

______School psychologist credential

______ M.A. degree in ______

Check

______Administration in elementary education

______Administration in secondary education

______Supervision in elementary education

______Supervision in secondary education

______Special subject supervision
  Name the subject: ______

Fill in Other Side of This Form

FEES

FEES PAYABLE AT TIME OF REGISTRATION

Regular students (carrying more than six units):	
Materials and service	$22.00
Auditors pay same fees as students carrying courses for credit.	
Limited students (carrying six units or less):	
Materials and service for one, two, or three units	9.00
Materials and service for four, five, or six units	15.00
Auditors pay same fees as students carrying courses for credit.	
Student activity fee (not a state fee)	10.00

MISCELLANEOUS FEES

(Fees payable when service is rendered)

Change of program	1.00
Failure to meet administratively required appointment or time limit	2.00
Late registration	2.00
Transcript of record (first copy free)	1.00
R. O. T. C. deposit (unexpended portion is refundable)	10.00
Loss or damage of equipment and library books	Cost
State teaching credentials (each credential)	4.00

The credential fee is collected through the college by cashier's check or post office money order made payable to the State Department of Education.

SUMMER SESSION FEES

Tuition, each session	(per unit)	8.50
Activity fee (not a state fee)		2.00

REFUNDS

To be eligible for partial refunds of materials and service fees, a student withdrawing from college must file an application with the Business Office within two weeks from the day classes begin.

Refunds are made for withdrawal to enter military service. Applications are accepted at time of withdrawal.

EXEMPTIONS

Students under Public Law 16, 346, 894, California state veteran, or state rehabilitation programs will have fees paid for tuition and materials and service under provisions of these respective programs.

VETERAN ALLOWANCES

Allowances for subsistence begin on the date the Business Office clears for payment of fees, or effective date of VA authorization, whichever is later, except that veterans clearing the Business Office on the regular registration days will be certified for subsistence beginning with the first day of the registration schedule.

FEES SUBJECT TO CHANGE

Fees are subject to change by law without advance notice.

CALENDAR 1955-1956

SUMMER SESSIONS, 1955

Term I (6 weeks) June 20-July 29
Term II (3 weeks) August 1-August 19

FALL SEMESTER, 1955-1956

July 9	Qualifying examinations for entering students (8.15 a.m.-3 p.m.). Reservations must be made at least one week prior to this date.
August 1	Applications for admission should be filed before this date.
August 20	Qualifying examinations for entering students (8.15 a.m.-3 p.m.). (Last opportunity to qualify for admission to fall semester). Reservations must be made at least one week prior to this date.
August 20	Last date to apply for admission to the fall semester. All official transcripts must be on file by this date to avoid late registration.
September 12-14	Testing and advising program. All new students are required to attend.
September 12	General Culture Test, required of all transfer students with 45 units or more who are candidates for secondary school credentials (1-4.30 p.m.).
September 14, 15, 16	Registration and payment of fees. (For evening program, see Extended Services Bulletin.)
September 16	Late registration fee effective at close of registration schedule. (See time as announced in the "Class Schedule and Instructions for Registration, Semester I, 1955-56.") (For evening program, see Extended Services Bulletin.)
September 17	Fundamentals Test, required of all transfer students with 15 units or more who are candidates for teacher education (8.30 a.m.-12 m.).
September 19	Classes begin.
September 21	Last date for payment of fees for students who did not complete registration on regular registration days. (For evening program, see Extended Services Bulletin.)
September 27	Applications for admission to Teacher Education, C.L.S. Auditorium (11 a.m.).
October 3	Last date to apply for refunds.
October 7	Last date to file applications for mid-year graduation.
October 21	End of first six-week period.
November 4	Last day for withdrawal from classes without penalty of class standing.
November 11	Holiday—Veterans Day.
November 24-25	Thanksgiving recess.
December 2	End of second six-week period.
December 5	File applications for June or summer graduation.
December 16	Last date for withdrawal from classes for the semester.
December 16	Last day of classes before Christmas recess.
December 17-January 2	Christmas recess.
January 3	Classes resume.
January 19	Final examinations start.
January 27	Fall semester ends.

SPRING SESSION, 1955-1956

January 3	Applications for admission should be filed before this date.
January 13	Last date to apply for admission to the spring semester.
January 14	Qualifying examinations for entering students (8.15 a.m.-3 p.m.). (Last opportunity to qualify for admission to the spring semester.) Reservations must be made at least one week prior to this date. All official transcripts must be on file by this date to avoid late registration.
January 30, 31-February 1	Testing and advising program. All new students are required to attend.
January 30	General Culture Test, required of all transfer students with 45 units or more who are candidates for secondary school credentials (1-4.30 p.m.).
February 1, 2, 3	Registration and payment of fees. (For evening program, see Extended Services Bulletin.)
February 3	Late registration fee effective at close of registration schedule. (See time as announced in the "Class Schedule and Instructions for Registration, Semester II, 1955-56.") (For evening program, see Extended Services Bulletin.)
February 4	Fundamentals Test, required of all transfer students with 15 units or more who are candidates for teacher education (8.30 a.m.-12 m.).
February 6	Classes begin.
February 8	Last date for payment of fees for students who did not complete registration on regular registration days. (For evening program, see Extended Services Bulletin.)
February 13	Holiday—Lincoln's birthday.
February 14	Applications for admission to Teacher Education, C.L.S. Auditorium (11 a.m.).
February 20	Last date to apply for refunds.
March 2	Last date for filing applications for June or summer graduation.
March 9	End of first six-week period.
March 23	Last date for withdrawal from classes without penalty of class standing.
March 23	Last day of classes before spring recess.
March 24-April 1	Spring recess.
April 2	Classes resume.
April 21	Qualifying examinations for entering students (8.15 a.m.-3 p.m.).
April 27	End of second six-week period.
April 28	Qualifying examinations for entering students (8.15 a.m.-3 p.m.).
May 5	Qualifying examinations for entering students (8.15 a.m.-3 p.m.).
May 11	Last date for withdrawal from classes for the semester.
May 12	Qualifying examinations for entering students (8.15 a.m.-3 p.m.).
May 30	Holiday—Memorial Day.
May 31	Final examinations start.
June 8	Commencement. Spring semester ends.

1955

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THE COLLEGE

FUNCTIONS OF SAN DIEGO STATE COLLEGE

San Diego State College has these major functions: (1) To aid the student to develop his powers of critical, independent thought and to become aware of the main streams of our Nation's cultural, social, and scientific traditions, (2) To inform the student of the political ideas and ideals that have built our Democracy and to stimulate in him an interest in participation in civic life, (3) To equip young men and women with the knowledge and skills necessary to meet the needs of California and the Nation for competence and leadership in a number of vocational and professional fields.

To achive these purposes San Diego State College has developed and is improving offerings as follows:

1. Student personnel services to assist the individual student to plan his educational program and to make his college and life adjustments.
2. General and liberal education for students who take work which leads toward the bachelor's degree or to the higher professions through graduate work.
3. Undergraduate and graduate curricula in teacher education for those students who plan to teach, supervise or administer at all levels in California's public schools.
4. Preprofessional curricula for fields such as medicine, dentistry, theology, and law.
5. Four-year curricula in such fields as business, industry, governmental services, homemaking, and social service.
6. Extension courses in appropriate fields.
7. Courses at the graduate level designed to extend the depth and scope of undergraduate work in several fields.

LOCATION AND ENVIRONMENT

Renowned as a winter resort with a mild but invigorating climate, San Diego has become equally famous for its cool summers. High cultural standards in art, music, literature, and science create a stimulating environment for a college. Many of these advantages are to be found in the heritage resulting from the expositions of 1915-16 and 1935-36, including the buildings themselves, which portray the best types of Spanish colonial art and architecture. Housed in these buildings are the Fine Arts Gallery, exhibits in anthropology, natural history, and American archaeology, which are in many respects unsurpassed. The outdoor organ, the Balboa Bowl, and the horticultural gardens make Balboa Park, in which all these facilities are located, world renowned. The Scripps Institution of Oceanography, operated by the University of California at La Jolla, gives opportunity for important cooperation in the biological sciences.

BUILDINGS AND EQUIPMENT

On February 1, 1931, the college was moved to the new campus, located one mile north of the city's principal east-west street, El Cajon Boulevard. The buildings are of Spanish-Moorish architecture which is well suited to the landscape and climate of this region. They include the Business Administration Building; the Science Building; the Fine Arts Building; the Library; the Little Theatre; the Music Building; the Physical Science Building; Scripps Cottage (a social clubhouse for women students); the Cafe and Book Store; and the Physical Education Building (a structure with adequate facilities for both men and women). During 1953 the following buildings were opened for use: the Administration Building; the Health Service Building; the Physics and Astronomy Building; the Campus Laboratory School; and an addition to the Music Building. During 1955 construction has been or will be started on an Engineering Building, Home Economics Classroom Building and Home Management Cottage; Speech and Radio Building and an Education Classroom Building. The Open Air Theatre, seating 4,200 persons, serves as a meeting place for large groups. There also is an excellent concrete stadium for football, constructed in a natural site, and a separate track and field sports area.

FACILITIES FOR THE EDUCATION OF TEACHERS

The college maintains a modern elementary school on the campus where it has developed an extensive program for the education of elementary school teachers. The classroom-laboratory plan which calls for the use of work-rooms, the library, and shops, affords unusual opportunities for the induction of students into teaching. By arrangement with the San Diego city and county schools, directed teaching is provided in the elementary and secondary schools.

THE FACULTY

The college faculty numbers over 250 members who have received their advanced training in over 100 colleges and universities of the United States or foreign countries. The faculty is distinguished not only in terms of formal education, but also represents a wide variety of practical experience in business, industry, and the teaching profession. Both past and present contributions to publications and research are extensive and impressive. For listings and further details see the directory.

THE LIBRARY

The library facilities of this college are noteworthy for an institution of its size. The library consists of over 160,000 volumes and receives more than 900 different periodicals selected to meet the requirements of a modern educational institution. Professionally trained librarians are available to render assistance to students and faculty in their reading and reference work.

The Campus Elementary School Library, representing a collection of 15,000 volumes, possesses equipment and building facilities that are unique.

ACCREDITATION

San Diego State College is a member of the American Association of Colleges for Teacher Education and the Western College Association.

LIVING ACCOMMODATIONS

Students living away from home may obtain assistance in locating housing through the office of the Associate Dean of Students, Activities. Single women students under the age of 21 must file with the Associate Dean of Students, Activities, a statement from the parent or guardian.

VETERANS' EDUCATION AND HOUSING

The college has been approved by various accrediting agencies to offer courses for veterans leading to the baccalaureate in numerous fields and to the master's degree and various teaching credentials. In connection with the Personnel Services Center, a veterans' office is maintained on the campus to facilitate registration, aid in the establishment of benefits, afford special counseling services, and serve as an information center.

Through the City of San Diego, 400 family units formerly under the jurisdiction of the Federal Public Housing Authority have been made available to the college for the housing of its married veterans. These units are located some eight miles from the campus proper at Aztec Terrace, near Old Town and Loma Portal. Applications for housing at Aztec Terrace are made through the office of the Dean of Students. Applications may be filed only after the student has been accepted for admission to the college.

STUDENT ACTIVITIES

A rich field of extracurricular activities is made possible through the Associated Students. The *Student Handbook,* available at the time of registration, gives information concerning the nature and scope of these opportunities. During the college year 1954-1955, seven governmental organizations, six service organizations, 31 departmental and honorary organizations, 12 religious organizations, 15 national fraternities, and 11 national sororities were officially recognized on the campus. Full programs of intramural and intercollegiate athletics are likewise maintained. Inquiries regarding sorority Rush Week should be addressed to Panhellenic, San Diego State College, San Diego 15. Students are urged to select extracurricular activities carefully in order to receive optimum benefit from group experiences and to maintain continuous records of good scholarship.

STUDENT HEALTH SERVICE

As a part of the program of student personnel services, the college provides health services for the protection and maintenance of student health. These health services, under the direction of a medical doctor and consisting of a full-time staff, assisted on a part-time basis by several medical specialists, are available to students for consultation, treatment of minor physical difficulties and emergencies, and counsel as to additional proper procedures. Full-time nurses are on duty. During the weeks the college is in session students may obtain appointments with specialists during the hours they are available at the Student Health Service. A student must be currently enrolled for seven or more units of credit to be eligible for other than emergency treatment.

As part of the regular admission procedure, a health statement is required of each student. A chest X-ray and a survey of eye and ear conditions are done as part of the registration procedure. A form is furnished each student prior to registration for the purpose of recording the results of a physical examination done by the student's private physician. Although the physical examination is not required as part of the admission procedure, it is strongly recommended as a means of compiling a complete health record of the prospective student. Careful attention is given to students undergoing private remedial treatment and to those for whom a modification of study load or amount of participation in physical activities seems advisable. A follow-up procedure is in effect for students who have been urged to consult their family physician for correction of defects found in the examination.

Physical examinations are required of and provided for all teacher education students at time of admission to and graduation from the various educational credential programs. Physical examinations are furnished by the Health Service only to those credential candidates who are applying for a state credential through the college, screened by the college. Physical examinations are also required before students are authorized to participate in the organized program of intramural recreation, or in intercollegiate athletics.

PERSONNEL SERVICES CENTER

The college offers the services of a trained staff to students who wish help in the solution of problems which are personal, social, academic, or occupational in nature. It is a program designed to help students gain the greatest possible advantage of their college experience. Agencies and facilities cooperating in the effort to assist students include the student health service; the test office; the reading, writing, and study laboratory; the speech improvement program; the placement and occupational guidance service; the veteran's service; and the counseling service. Students who wish to take advantage of these facilities may do so through the Personnel Services Center.

PLACEMENT OFFICE

The college provides a centralized placement service in cooperation with the various departments of the college. Students are aided in securing part-time and full-time positions and in obtaining information concerning occupational trends. Liaison is maintained with the Personnel Services Center on matters relating to senior vocational counseling. Staff members maintain constant contact with schools, businesses, and industries.

SPEECH CORRECTION CLINIC

A speech correction clinic for the training of college students in speech correction is held each Saturday during the school year, from 9 to 12 a.m., to deal with all types of speech problems, such as stuttering and lisping. It is open for ages from 4½ years to the young adult; however, because of physical limitations, not all who apply are admitted. The cost of materials, not to exceed $1, must be met by the parent or individual concerned. Parents who enroll a child in the clinic must also enroll in Speech Arts E-175, The Role of Parents in Problems of Speech Correction, for one unit of credit, offered as an extension course each semester.

SCHOLARSHIPS AND AWARDS

A number of scholarships and awards are available, usually to students who have completed at least one semester at San Diego State College. These are granted on the basis of adequate scholarship, special skill, and/or need, according to the wishes of the friends of the college making these awards possible.

GROUP I SCHOLARSHIPS

The following scholarships are available through application to the faculty Committee on Scholarships. Application forms may be obtained from the office of the Associate Dean of Students, Activities.

ALPHA PHI OMEGA. A $50 scholarship awarded each semester to a student whose grade point average is 1.5 or better. If an entering freshman, the student must have had a "B" average in high school. The committee will select three applicants for recommendation to Alpha Phi Omega for final selection.

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN. One scholarship of $100 given each year in June to a graduating senior who will begin work in an accredited college or university toward a higher degree or credential. The scholarship is made available by the San Diego Branch of the American Association of University Women. Interviews with representatives of that organization are arranged.

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN—SAN DIEGO BRANCH. A scholarship awarded annually by Mrs. W. O. Shackelford, a member of the San Diego Branch of the American Association of University Women, to encourage qualified and gifted women to enter the teaching profession. Sixty dollars a semester is given to an undergraduate woman student in her junior or senior year of college who is preparing for elementary or secondary school teaching. She must have a "B" average or better. The recipient is required to teach at least one year after graduation or repay the amount received from this award. The Scholarship Committee of the San Diego Branch of A. A. U. W. makes final selection.

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN—SAN DIEGO BRANCH—GERTRUDE SUMPTION BELL SCHOLARSHIP. A $50 scholarship given annually to a woman student majoring in English, Psychology or Education. Final selection is made by the Scholarship Committee of A. A. U. W.

ANONYMOUS (B). A scholarship of $100 given each year to be divided among students in financial need, at the discretion of the Committee on Scholarships. The committee gives consideration to scholastic attainment, financial need, and character.

ANONYMOUS (E). A $50 scholarship awarded each semester. A public spirited citizen who prefers to assist a student majoring in science makes this award possible.

ASSOCIATION OF CHILD EDUCATION. A $50 scholarship given to a student in the Kindergarten-Primary program. The award is customarily made to an upper division student showing promise who is in need financially.

BLUE KEY. Two scholarships of $50 each given annually; one each term. One shall be awarded an entering male freshman student, preferably from San Diego County. The other scholarship will be awarded to a male student in the lower division who has completed at least one semester (12 units) of work at San Diego State College.

BURGENER, CLAIR W., SPEECH SCHOLARSHIP. A four-year scholarship of $50 per semester awarded to an entering freshman who is outstanding in public speaking and general scholarship. Recommendations will be made by the Speech Arts Department with final selection by the Committee on Scholarships.

CAP AND GOWN. One $50 scholarship awarded annually to an upper division woman student who has attended San Diego State College for at least one semester and who has maintained at least a "B" average in scholarship for her entire college career.

CONSOLIDATED VULTEE AIRCRAFT CORPORATION. Nine scholarships each year for students from the fields of accounting, engineering, mathematics, physics, business, personnel and industrial management. Each scholarship will provide $75 a semester for each semester in college as long as the student maintains a standard of superior academic performance. Freshmen, sophomores and juniors are eligible.

DELTA DELTA DELTA NATIONAL FRATERNITY ALLIANCE. $100 a year given in memory of Georgia Aiman Shattuck. This scholarship is to be awarded to a woman student, in the upper division, who has been admitted to the teacher education curriculum, with a "B" average in all college work, and who is in financial need.

EL CERRITO EXCHANGE CLUB OF SAN DIEGO. $75 scholarship awarded annually to a deserving student who is majoring in any branch of the teaching field.

ENGINEERS CLUB OF SAN DIEGO. Awards of from $50 to $100 made annually to student majoring in engineering. The San Diego State College Scholarships Committee recommends three candidates to the Engineers Club of San Diego for final selection.

EXECUTIVES' SECRETARIES, INC., SAN DIEGO CHAPTER. Annual $100 scholarship for an upper division woman student majoring in business education. She must have a "B" average. The group selects the candidate from recommendations of the San Diego State College Scholarship Committee.

FACULTY DAMES. Two scholarships of $50 each given annually to deserving women students.

FAY, MARY, SCHOLARSHIP. A $250 scholarship donated by the Scott Foundation for a student to attend a conference in New York City and to visit the United Nations. Students applying must be sophomores and juniors and must return to San Diego State College the following year to report on conference. Recipient must be a student who has done something outstanding on behalf of international understanding.

FLEISCHNER, ANNA S., SCHOLARSHIP, given by Dr. and Mrs. Charles A. Fleischner. An award of $150 given annually to a needy, physically handicapped student, irrespective of race, color or creed.

FOOTHILL BUSINESS AND PROFESSIONAL CLUB. Two $50 scholarships awarded to young women students.

HALE, E. T., ATHLETIC SCHOLARSHIPS. $25 a month or more donated for scholarships to outstanding athletes.

INTERFRATERNITY COUNCIL BASKETBALL SCHOLARSHIP. Three $25 scholarships awarded annually to three entering basketball players. The scholarships will be given at the beginning of either the fall or spring semester. Only students having regular status will be considered for the scholarships.

JONES, SYBIL ELIZA, MEMORIAL. A scholarship awarded to a student in drama. Applicant must be officially enrolled in at least his fourth semester in speech and drama with participation in dramatic productions on the campus. He must have at least a "C" average in all college work.

KAPPA BETA NU. A $100 scholarship offered annually to a junior or senior woman student in elementary teacher education. Applicant must be a resident of San Diego County who is in financial need. Final selection rests with a scholarship committee of Kappa Beta Nu.

KAPPA DELTA PI. Two $25 scholarships awarded annually by Kappa Delta Pi of San Diego State College for students in teacher education. Selection for awards is made by the group.

KAY-LAB, INC. Two annual awards of $50 each to students of physics, one award to be made to a freshman on the basis of his performance on the competitive physics test given high school seniors by the Southern California Section of the American Association of Physics Teachers. The other award goes to an upper division student majoring in physics.

LEMON GROVE WOMAN'S CLUB JUNIORS. A $50 scholarship for upper division woman student in teacher education. Financial need is first consideration in awarding this scholarship.

MARCY, MAY FINNEY. Fifty-dollar scholarships awarded to women students in upper division. Awards are made upon recommendation of the faculty Committee on Scholarships to Mrs. Marcy and a committee of members of Gap and Gown on San Diego State College campus.

MUSIC DEPARTMENT SCHOLARSHIPS. A limited number of Music Department scholarships covering the costs of tuition, books, and other supplies available to regular course music majors. The awards of these scholarships are based upon financial need, scholarship, and performing talent as demonstrated in auditions before a scholarship committee of the Music Department.

NORTH PARK KIWANI-ANNES. One scholarship of $50 a semester for a year awarded annually to a male student preparing for teaching. The recipient must have at least junior standing.

PI LAMBDA THETA. An annual scholarship of $50 given to a senior student in education. Final selection is made by the fraternity.

PRESBYTERIAN WESTMINSTER FOUNDATION. A scholarship of $50 awarded each year at the end of the spring semester to a student of any religious faith enrolled at San Diego State College on the basis of contribution of time and energy to campus religious ideals and activities, and liaison with nonreligious groups, stimulating them to religious thought and activities. This scholarship is made available by the Presbyterian Westminster Foundation Committee of the San Diego area.

SAN DIEGO BUSINESS AND PROFESSIONAL WOMEN'S CLUB. A $50 scholarship awarded annually to a worthy young woman attending San Diego State College and having at least a "C" average.

SAN DIEGO CITY PANHELLENIC. Two $50 scholarships awarded annually to two upper division women students.

SAN DIEGO COUNTY TEACHERS ASSOCIATION. Four $100 scholarships made available annually. Awards are made to students in the field of education.

SAN DIEGO SOCIAL WORKERS CLUB. A scholarship of $50 each semester for an upper division student intending to enter the field of social work, who has above average scholarship and shows evidence of financial need.

SCOTT FOUNDATION MUSIC SCHOLARSHIPS. Five $100 scholarships awarded annually. Any student entering college who is interested in music as a major is eligible to apply. All awards will be granted on the basis of competition in auditions. Applications may be made directly to the Music Department, San Diego State College, in writing, giving the following information: (1) your name, address, and telephone number; (2) your instrument; (3) high school you are attending; (4) the probable date of your graduation; (5) the names of two references.

SENN, PERCIE BELL, SCHOLARSHIP IN PUBLIC SPEAKING. An annual scholarship made possible by Admiral Elliott Senn, who has donated $1,500 to the San Diego State College Foundation for the purpose of assisting students in public speaking. This is awarded to an entering freshman or any qualified student in the field of debate.

DAVID AND ANNA SILVERMAN. The interest from a fund of $5,000 awarded annually, preferably to a man interested in a career in medicine or teaching. Final selection will be made by a three-member board of trustees empowered to invest the sum.

SOUTHLAND CLUB SCHOLARSHIP. A $50 award made available by the Southland Club for Business and Professional Women to a junior or senior woman student who plans to enter business or a profession. The student must have at least a "B" average; she must have been graduated from a San Diego City or County high school and must be of good moral character and in financial need.

TEACHER EDUCATION SCHOLARSHIP. $1,200 awarded by the California Congress of Parents and Teachers to three or more students. Selections are made upon the following conditions: (1) the recipient must have high qualifications and be in financial need; (2) the scholarship will be granted to students training to teach in the public schools of California; and (3) the award shall be limited to students in the junior and senior years with one $400 award going to a fifth-year student training to teach on a general secondary credential.

WILMIA TYLER-TROTT. An annual scholarship of from $50 to $100 made possible by Wilmia Tyler-Trott, who has donated $5,000 to the San Diego State College Foundation. This scholarship will be awarded any deserving student.

WEST COAST ELECTRONIC MANUFACTURERS ASSOCIATION. A scholarship of $300 awarded to a freshman, sophomore or junior without discrimination as to race, creed or color. Student selected must be interested in electronic engineering or allied branches, toward a technical education.

WOMEN'S AUXILIARY OF SAN DIEGO DENTAL SOCIETY. An annual award of $100 made in June to an outstanding male student in pre-dentistry.

GROUP II SCHOLARSHIPS

The following scholarships are available through application to the donor.

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN—EL CAJON VALLEY BRANCH. An annual scholarship of $50 presented to a young woman entering San Diego State College.

CONVAIR MANAGEMENT CLUB. Three awards offered to seniors graduating from high school who are sons or daughters of Convair employees.

ESCONDIDO BUSINESS AND PROFESSIONAL WOMENS CLUB. Two $100 scholarships given annually to two high school graduates who plan to attend San Diego State College. These students are selected by the club on basis of good citizenship, good grades and participation in activities.

KAPPA ALPHA PSI FRATERNITY—SAN DIEGO ALUMNI. An annual $50 scholarship ($25 per semester) awarded to a student graduating from high school for fees at San Diego State College.

KAY JEWELERS SCHOLARSHIP. $30 a semester for eight semesters awarded an entering freshman. This scholarship is to be given alternating years to men and women students. In the fall semester, 1955, the scholarship will be awarded to a young woman. Selection is made from applications received from high schools.

LA MESA EVENING WOMEN'S CLUB. A $75 scholarship awarded a senior in high school who is entering San Diego State College.

LINKLETTER, ART. Four $50 awards made each June to students graduating from San Diego City and County high schools: (1) one to a girl and one to a boy graduating from high schools with enrollment of 1,000 or over; and (2) one to a boy and one to a girl from high schools with enrollment under 1,000. Selection is based on scholarship, citizenship, and need. Applications should be made through the high school counselor.

OPTOMETRIC ASSOCIATION OF SAN DIEGO COUNTY—WOMAN'S AUXILIARY. Fifty dollars awarded annually during the spring semester to a student who meets the qualifications set up by the Auxiliary. The award is based on scholarship, qualities of character and personality, high moral integrity, and need.

OSTEOPATHY AUXILIARY—SAN DIEGO COUNTY. An annual award of $100 to a student who has graduated from the San Diego State College and has been accepted for enrollment in the College of Osteopathy in Los Angeles.

P.E.O. SCHOLARSHIPS. Various chapters of this organization assist worthy students in amounts ranging from $15 a month to $50 a semester.

ROTARY INTERNATIONAL CLUB. Scholarships of various amounts have been awarded students by El Cajon, Escondido, Old Mission, San Diego, Oceanside, and Vista Rotary Clubs.

SAN DIEGO CITY TEACHERS ASSOCIATION. Two scholarships of $100 each presented each year to prospective teachers with no restrictions as to college year.

SCOTT FOUNDATION—MERCHANDISING. A scholarship in the amount of $500 available to men students planning on careers in retail trade and interested in remaining in the San Diego Area. The recipient can be accepted for the scholarship during the freshman, sophomore, or junior year. The award will be paid at the rate of $50 a semester for each of the first three years and $100 a semester during the senior year.

TOWN AND COUNTRY CLUB—ESCONDIDO, CALIFORNIA. A $200 scholarship given an outstanding student graduating from Escondido High School who plans to attend San Diego State College.

WALKER, RALF MARC. A scholarship in the amount of $500 made available by the Walker-Scott Corporation in memory of the late Mr. Ralf Marc Walker to a woman student majoring in merchandising or retail trade at the San Diego State College. The scholarship is presented to a girl in Walker's Hi-Debber Council each year. The total scholarship is deposited in the San Diego State College Foundation and is paid to the recipient at the rate of $50 a semester for each of the first three years and $100 a semester for the two senior semesters.

AWARDS

The following scholarships are awarded through the cooperative efforts of the faculty Committee on Scholarships, interested academic department, and the donor.

ALPHA GAMMA DELTA. An annual $50 award to the student in Alpha Gamma Delta sorority with the highest grade point average.

ARNOLD AIR SOCIETY SCHOLARSHIP. $50 awarded annually to any Air Science III student who is offered and accepts a contract in the semester in which the scholarship is offered. Qualifications: 1. Must be in top 20 percent of air science class; 2. Must have displayed outstanding leadership ability in the air program; 3. Must have desire to participate in the flight training program of Air Force; 4. Must have over-all scholarship equal to or above all men's average.

CHI OMEGA FRATERNITY. A $20 scholarship awarded annually to a student outstanding in the Sociology or Psychology Department.

DANCE CLUB OF SAN DIEGO STATE COLLEGE. A $50 scholarship awarded to an outstanding dancer from the club to be used for tuition at a recognized summer school of the dance.

DAUGHTERS OF THE AMERICAN REVOLUTION. Two scholarships of $25 each presented each spring, one to a young man and the other to a young woman outstanding in citizenship and Americanism. Presentation of awards is made at a luncheon on Flag Day, which is given by the Daughters of the American Revolution.

KAPPA ALPHA THETA MOTHERS CLUB. A scholarship of $50 awarded annually to the member in the local chapter who has made the highest grade point average for the school year.

NATIONAL LEAGUE OF AMERICAN PEN WOMEN—SAN DIEGO BRANCH. A scholarship of $50 awarded annually to an outstanding woman student. Selection will be made from students in the fields of art, music, and creative writing.

PANHELLENIC OF SAN DIEGO STATE COLLEGE. $50 given biannually to the sorority member who has made the highest grade point average in the semester previous to the making of the award.

PHI ALPHA THETA (BETA KAPPA CHAPTER). A $50 scholarship awarded to a history major. Applications should be made during the last semester of junior year to the Chairman of the History Department.

SAN DIEGO WOMAN'S CLUB. An annual award of $50 given to a student who is outstanding in debate.

STEINMAN-HILLEL. $50 to be awarded annually to a student who has done the most to further the cause of interfaith cooperation among the students of the campus. The selection of the awardee shall be made by a committee of three judges. Award is made possible by the Lou Steinmans, members of the Lasker Lodge of the B'nai B'rith which sponsors the Hillel organization on the campus.

STOTT, DOROTHY CRANSTON. A scholarship of $100 awarded each June to a student who has attended the San Diego State College for a least two years and who is being graduated or has been graduated from the San Diego State College with a major in English. The recipient must continue work in the San Diego State College or in any other accredited college or university, towards a higher degree or credential. The selection is made by the Department of English with approval by the Committee on Loans and Scholarships.

STOTT, K. W. A scholarship of $100 awarded each June to a student who has attended the San Diego State College for at least two years and who is being graduated or has been graduated by the San Diego State College with a major in History. The recipient must continue work in the San Diego State College, or in any other accredited college or university, towards a higher degree or credential. The selection is made by the Department of History with approval by the Committee on Loans and Scholarships.

WEINBERGER, HENRY, INTERFAITH SCHOLARSHIP. A scholarship of $100 awarded in April of each year to the student of any religious faith enrolled at San Diego State College who is judged to have done the most to further interfaith ideals among the students of the college during the year of the award. This scholarship is made available by Mr. Henry Weinberger of the Lasker Lodge of B'nai B'rith, under auspices of the B'nai B'rith-Hillel Councilorship on San Diego State College Campus.

LOANS

Short term loans are available to students who have attended San Diego State College for at least one semester and who have demonstrated ability to do satisfactory college work.

Several long term loans are also available including loans from the Martha Farnum Memorial Loan Fund which is for the benefit of students in teacher education.

Applications for loans are made through the Office of the Activities Adviser.

ADMISSION AND REGISTRATION

GENERAL ADMISSION REQUIREMENTS

Admission standards at San Diego State College are stated in the California Administrative Code, Title 5, Education, which provides uniform admissions regulations for all California state colleges.

ADMISSION OF HIGH SCHOOL GRADUATES

The code provides as follows:

"925. **High School Graduates.** For admission to a state college, a high school graduate, or other applicant who is judged by the appropriate college authorities to possess equivalent preparation, must, as a minimum, meet one of the following:

"a. Have completed the equivalent of seventy semester periods (7 Carnegie units) of course work, in subjects other than physical education and military science, with grades of A or B on a five-point scale during the last three years in high school.

"b. Have completed the equivalent of fifty semester periods (5 Carnegie units) of course work, in subjects other than physical education and military science, with grades of A or B on a five-point scale during the last three years in high school and attained the twentieth percentile on the national norm of a standard college aptitude test.

"An applicant who fails to meet these standards may be admitted, if in the judgment of the appropriate college authorities, he gives promise of being able to succeed in college.

"Admission to a state college shall be limited to the number of students for whom facilities and competent instructors are available to provide opportunity for an adequate college education. The Director of Education after consultation with the president of a state college shall determine the number of students for whom there are available facilities and competent instructors at the college."

Procedure for admission: An applicant must (1) file an official application form for admission and a Health History Record form; (2) have an official transcript of high school record, showing date of graduation, sent directly from the high school to the Admissions Office, San Diego State College; and (3) take the freshman qualifying examinations on one of the scheduled dates prior to registration (includes the college aptitude test required of students qualifying under paragraph "b" above). Veterans desiring credit for military service and veteran benefits under the Veterans Administration must also file a photostat of the military separation form, DD-214, or equivalent record.

High school preparation: Students preparing to enter college are urged to consult their high school advisers and plan a program in high school that will prepare them adequately to pursue their chosen curriculum at the college level. The following high school courses are recommended as preparation for any college course leading to the bachelor's degree: English, 3 years; algebra, 1 year; geometry, 1 year; one foreign language, 2 years; American history and civics, 1 year; additional social science, 1 year; botany, chemistry, physics, physiology, or zoology, 1 year. Typing is a recommended elective.

Students preparing to enter the fields of natural science and engineering should include additional courses for specific majors. The following courses are recommended: chemistry and physics, 1 year credit in each field; advanced algebra, 1 year; trigonometry and solid geometry, 1 year; one modern foreign language, two years. Recommended electives: slide rule, mechanical drawing.

ADMISSION BY EXAMINATION

The College Entrance Examination Board examinations in various subject areas are accepted in lieu of the corresponding high school record if scores on the examinations indicate probable college success, as determined by the Board of Admissions.

ADMISSION OF ADULTS TO SPECIAL STATUS

The code provides as follows:

"926. **Adult Special Students.** An applicant who has attained the age of 21 years and is not a high school graduate may be admitted to the state college as an adult special student provided that he demonstrates to the proper college authorities, ability to profit from college work. If such a student completes with a grade point average of 1.0 (grade of C on a five-point scale) or better a program of 24 semester or 36 quarter units of residence work in basic courses leading to a degree, he shall not be required to remove entrance deficiencies."

ADMISSION WITH ADVANCED STANDING

The code provides as follows:

"928. **Students Who Transfer From Accredited Degree Granting Colleges and Universities.** An applicant who has earned credit in accredited degree granting colleges and universities may be admitted to a state college if he meets standards as follows:

"(a) He must have a grade-point average of 1.0 (grade of C on a five-point scale) or better on the total program attempted, or

"(b) He may receive special consideration if he attains the twentieth percentile of the national norm of a standard college aptitude test provided that he must have been in good standing at the last college institution attended, and his previous record must be such that it would not disqualify him in the college to which he seeks admission.

"(c) A student who does not meet the above requirements may be admitted on probation, if in the opinion of the proper college authorities he can succeed in college."

"929. **Students Who Transfer From Unaccredited Colleges and Universities.** An applicant who has attended a nonaccredited college or university may be admitted to a state college if he meets the standards listed above for transfers from degree granting colleges and universities, but credit earned in nonaccredited colleges and universities may be counted toward graduation requirements only after he has earned 24 semester or 36 quarter units with at least a C average."

"930. **Students Who Transfer From Junior Colleges.** An applicant who has earned credit in a junior college may be admitted to a state college if he meets the standard previously listed in this article, except that in case the applicant was ineligible for admission to a state college on the basis of his high school record he must, as a condition to admission to a state college, have completed 24 or more semester units of college work with a grade-point average of 1.0 (grade of C on a five-point scale) or better in the total program attempted.

"Not more than 64 semester units may be allowed for credit earned in a junior college. No upper division credit may be allowed for courses taken in a junior college. No credit may be allowed for professional courses in education taken in a junior college."

"931. **Other Applicants for Admission With Advanced Standing.** An applicant who fails to meet the standards listed above in this article may be considered by the appropriate state college authorities for admission to the college on probation when the facts in the case seem to warrant such action."

RECORDS TO BE FURNISHED

Any student applying for admission to this college must report all high school and college work undertaken by furnishing official transcripts from each school or college in which the student has ever been enrolled, including courses in extension and correspondence. **No part of this work may be disregarded.** Students failing to account for the complete high school and college record are subject to dismissal from college without honorable dismissal.

Applicants for admission who have had active military service in the United States armed forces must furnish this college with a photostat of the military separation form DD-214, or equivalent records, in order to receive credit for military service or be certified by the college to the Veterans Administration as fully matriculated students eligible to apply for veteran benefits.

Any transfer student who has earned in college 45 semester units or more may apply for an evaluation of his record. If an official evaluation is desired, the application and all official transcripts and records must be on file at least 30 days prior to the beginning of any semester or summer session. An unexpected increase in enrollment may cause a delay beyond 30 days in completing an evaluation.

ADMISSION TO GRADUATE STUDY

The code provides as follows:

"932. **Admission With Graduate Standing.** A student may be admitted to a state college with graduate standing upon the basis of standards as follows:

"(a) The applicant must have completed a four-year college course with an acceptable baccalaureate degree from an accredited institution or must have completed equivalent training as determined by the appropriate state college authorities, and

"(b) He must give evidence of the possession of such other qualifications as the receiving college may prescribe, such qualifications to include appropriate scholastic, professional, and personal standing, and the passing of any required examination."

Admission to the college must first be secured. A reapplication must be filed upon re-entrance following graduation with a bachelor's degree from San Diego State College. Apply at the Office of Admissions.

Graduate status may be granted to applicants who have regularly applied at the Office of Admissions and have filed official transcripts as evidence of their possession of a bachelor's degree from an accredited institution. Refer to master of arts degree and to teaching credentials.

Graduate special status may be granted to those who are provisionally admitted to graduate study. It is given to a student (1) who has not completed all admission procedures required for graduate status and (2) to a student whose bachelor's degree was earned at a nonaccredited college. A student from a nonaccredited college will be eligible for graduate status when he has earned a grade point average of 1.5 on 12 or more units of approved upper division work at this college and has cleared all undergraduate deficiencies.

Admission to candidacy for the master's degree or for a teaching credential may be achieved by meeting the respective specific requirements. Refer to the section of the catalog on teacher education and the master of arts degree.

Admission to courses numbered 200-299 requires graduate status and the meeting of specific prerequisites. A graduate student who may be permitted to enter a graduate course pending full graduate status will be given only upper division credit if graduate status is not achieved by the end of the term in which the course is given.

DEGREES OFFERED

The following degrees are offered by the college: bachelor of arts, bachelor of science, bachelor of education, bachelor of vocational education, and master of arts.

CERTIFICATES OFFERED

The following certificates are offered by the college: certificate in public administration and certificate in public welfare administration. Requirements for these certificates may be completed in the Extended Day program. For further explanation of requirements, refer to the section of the catalog on Public Administration.

EXTENDED DAY PROGRAM

In order to meet the needs of adults in the community for work on the college level, some courses in the late afternoon and evening are listed under an extended day program. These include both undergraduate and graduate courses and carry full college credit. Classes offered under this program are part of the regular college offerings and are taught by faculty of the college, but moved to a late afternoon or evening hour to permit in-service teachers, public personnel, businessmen, and others to attend. A special bulletin describing the current offerings is issued each semester and may be obtained upon request from the office of the Dean of Educational Services.

EXTENSION PROGRAM

In order to serve more adequately the needs of the community, the college cooperates with off-campus organizations and groups in arranging extension classes in response to expressed needs when the group is sufficiently large to finance the instruction. Offerings are made each semester in a number of departments including education, business administration, and the arts and sciences. Classes may be organized at various points within San Diego and Imperial Counties. A minimum of 15 to 20 students is usually required in order to establish a class. The usual class carries two units of credit and meets once a week, either in the late afternoon or evening. The minimum basic fee is $7.50 per unit. Interested persons desiring detailed information regarding organization of classes or current offerings should contact the Dean of Educational Services.

AUDITORS

Properly qualified persons may apply for admission to attend classes as auditors. Such students pay the same fees as those who take equivalent work for credit.

A student enrolled in a course for "audit" who wishes to change his program to "credit" or a student who is enrolled in a course for "credit" who wishes to change his program to "audit" must apply for this change of program at the Registrar's Office within the time allowed for changes of program and with appropriate approval. Refer to the calendar in this catalog and to the class schedule and instructions for registration issued at the beginning of each semester.

TESTS REQUIRED AT REGISTRATION TIME AND LATER

1. A physical examination is required of all students entering or re-entering the college after an absence of more than one semester, except that students carrying six units or less or students enrolled in extended day classes only are not required to take the physical examination. This examination is scheduled during the testing and advising period and must be completed before registration.
2. All entering students are required to take a college aptitude test as prescribed by this college. This test is scheduled at various times during the year and must be completed prior to registration. Refer to the calendar in this catalog for dates on which the qualifying examinations are given.
3. Additional tests for English, mathematics, and speech competency are required of entering freshmen and students transferring with advanced standing who have not previously met these competency requirments by completion of appropriate courses in other colleges. Remedial courses for credit are established for students failing these tests. Refer to the calendar in this catalog for dates on which the qualifying examinations are given.
4. Candidates for admission to teacher education are required to complete the teacher education examinations as prescribed by the Department of Education. For further information, refer to the section of this catalog on Admission to Teacher Education and to the calendar.

LATE REGISTRATION

Students who do not complete registration on the regularly scheduled registration days and within the time allowed for completion of registration are subject to a $2 late registration fee.

To be eligible for registration on the regularly scheduled registration days, an applicant must have completed the following requirements prior to the deadlines as announced in the calendar of this catalog: the application for admission and health history record forms on file in the Admissions Office; all required tests completed; all official transcripts on file in the Admissions Office; the applicant must have received the official notice of acceptance by the college.

If the above requirements have not been completed within the time allowed as announced in the catalog and in the class schedule and instructions for registration, the student will be subject to late registration and the late registration fee or possible postponement of permission to enroll in the college. For complete information on registration, refer to the class schedule and instructions for registration, published prior to the beginning of each semester.

CHANGES IN REGISTRATION

A student is responsible for any change in his program after the official study list has been filed. Forms for changes in program must be secured at the Registrar's Office. A fee of $1 is charged.

REGULAR SESSION FEE REFUNDS

(1) A portion of the materials and service fees charged a regular session student may be refunded if written application for refund is made not later than 14 days following the day of the term that instruction begins; and provided, further, that the amount of $2 shall be retained to cover the cost of registration.

(2) The late registration fee is not refundable.

The Business Office should be consulted for further refund details.

GENERAL REGULATIONS

INFORMATION

Inquiries relative to the college should be directed to the Registrar's Office.

NUMBERING OF COURSES

Courses numbered 1 through 99 are in the lower division; those numbered 100 through 199 are in the upper division; and those numbered 200 or over are in the graduate division. Courses numbered 300 or over are professional education courses on the graduate level.

GRADES AND GRADE POINTS

GRADES

The following grades are used in reporting the standing of students at the end of each semester: A, excellent; B, good; C, fair; D, passing; F, failed; I, incomplete; Cr, credit (without grade); WP, withdrawal passing; and WF, withdrawal failing.

GRADE POINTS

Grade points are assigned as follows: Grade A, 3 points per unit; B, 2 points per unit; C, 1 point per unit; D, no point per unit; F or WF, no point per unit. Grades of I, Cr, or WP are disregarded in computing grade points. The number of grade points a student has earned in a subject is determined by multiplying the number of points he has received by the number of units allowed. The grade point average is determined by dividing the grade points earned by the number of units attempted. A student must earn at least a C average in all work undertaken at the college to qualify for a degree or a transcript of record with recommendation to another collegiate institution. Any course may be repeated, but not for additional credit; however, only the second grade earned is considered in the student's average.

INCOMPLETE GRADE

One calendar year beyond the end of the term when an incomplete grade is assigned will be allowed for making up the incomplete without repeating the course. This regulation does not apply to the thesis courses numbered 299. A student who completes the requirements remaining for removal of the incomplete within the calendar year will receive a final grade for the course in the same manner as if the course were completed at the end of the semester in which the course was taken.

CLASS, UNITS OF WORK, AND STUDY LIST LIMITS

CLASS

Students who have completed 0 to 29 units of work are classified as freshmen; 30 to 59 units as sophomores; 60 to 89 units as juniors; and 90 or more as seniors.

UNITS OF WORK

A unit of credit represents 50 minutes of lecture or recitation combined with two hours of preparation per week through one semester, or three hours of laboratory or field work in the case of laboratory credit.

STUDY LIST LIMITS

A normal semester's program is 16 units. A student may vary from this program, with the permission of his adviser, if he does not take fewer than 12 units or more than 17½ units. Greater variations must be approved by the Dean of Instruction, who may refer the request for variation to the Scholarship Committee.

Students who enroll for more units than authorized, including concurrent college courses taken outside this college, will not receive graduation credit for the excess units.

No student may register for less than 12 units (the minimum full-time load) without the approval of the Dean of Instruction.

CHANGE OF MAJOR FIELD

At the time of admission to the college, each student is assigned to a major field. Any student wishing to change his major field after registration must make application at the Personnel Services Center. Veterans using veteran benefits must obtain appropriate approval from the Veterans Administration for necessary changes in letters of eligibility.

PROBATION AND DISQUALIFICATION

PROBATION

Any student whose scholarship record shows a cumulative deficit of seven or more grade points below a C average for all college work undertaken or for all work taken at this college will be placed on probation. A student transferring from another college may also be placed on probation by the Board of Admissions because of scholarship deficiencies at the other college.

Probation may be continued provided the student obtains a C average or better each semester while on probation and is not disqualified. The transfer student who was admitted on probation will remain on probation until all grade point deficiencies from the other college have been removed and until all work taken at this college is a C average or better. Other students will remain on probation until the grade point deficiency at this college has been reduced below seven.

DISQUALIFICATION

Any student on probation whose scholarship falls below a grade point average of 1.0 in any single semester is disqualified from further attendance at the college.

A disqualified student may be reinstated for reasons satisfactory to the Board of Admissions. Applications for reinstatement must be made on forms which may be obtained at the Admissions Office.

Veterans who are disqualified from further attendance at this college forfeit their rights to veteran benefits. Specific information should be obtained from the Veterans Administration regarding continuance of education.

WITHDRAWALS

Forms for withdrawal from class or withdrawal from college may be obtained at the Registrar's Office. If a student withdraws by the end of the eighth week of the semester, a grade of WP (withdrawal passing) will be recorded upon his permanent record for each class from which he has withdrawn. If he withdraws after the eighth week and not later than the end of the fourteenth week of the semester, either a WP or WF (withdrawal failing) will be recorded, depending upon whether he is passing or failing the course on the date of filing the request for withdrawal. (WF is equivalent to a failing grade.) After the fourteenth week, a final grade will be recorded for each class for which the student is enrolled.

Note: A student unofficially withdrawing from class or from college will receive failing grades in all courses for which he is enrolled. Applications for withdrawal must be filed officially at the Registrar's Office within the time limits stated above.

WITHDRAWAL TO ENTER MILITARY SERVICE

A student withdrawing from college to enter military service is entitled to apply for refund of tuition or for partial credit (but not both). One-third credit is allowed for completion of the first six weeks of the semester in courses for which the student is enrolled and has been in regular attendance; two-thirds credit for completion of the first 12 weeks of the semester in courses for which the student is enrolled and in which he is passing at the time of withdrawal. Entrance upon extended active military duty must be without unreasonable and unnecessary delay (normally 30 days) after the date of withdrawal from college to qualify the student for refund of tuition or partial credit. A student electing to receive a refund of tuition or partial credit must file official verification of the date of entry upon *extended active duty*.

TRANSCRIPTS OF RECORD

An official transcript of record may be obtained by filing an application for transcript at the Registrar's Office. Transcripts sent from one college to another are considered as official. Transcripts presented by a student to a college are considered to be unofficial and are usually not accepted.

Once a student has matriculated in this college or has had an official evaluation made, transcripts from other schools or colleges become the property of this college and *will not be released nor will copies be made.*

At the end of each semester or summer session in which the student is enrolled, an unofficial transcript showing the cumulative record is sent to the student.

EVALUATIONS

An evaluation is a summary of college work completed and of requirements to be completed for a degree or credential. To be eligible for an evaluation, a student must have completed at least 45 units of acceptable college work and be qualified for full matriculation. Authorization for more than one evaluation during any one semester or one evaluation in nine weeks of summer session requires special permission of the Board of Admissions and Evaluations.

A student who has earned 45 semester units, or more, of college work should apply at the Evaluations Office for an official evaluation. The evaluation is made on the regulations in effect at the time the student entered this college, provided that he has been in uninterrupted attendance as a full-time student at his college; otherwise, the evaluation is made on regulations currently in effect at the time the evaluation is made. An evaluation remains in effect so long as the student earns a minimum of 12 semester units in residence within each two-year period, beginning with the term immediately following the one in which the evaluation is made. Each summer session term is counted as a term. All evaluations are subject to changes imposed upon the college by the State Board of Education. After an interval of five years from the time an evaluation is made, courses in education to be applied toward a teaching credential are subject to re-evaluation.

ELIGIBILITY FOR DIRECTED TEACHING

Only students who have earned full admission to the teacher education program shall be eligible for directed teaching. For details, refer to the section of this catalog under Admission to Teacher Education.

THE HONORS PROGRAM

Any student who at the end of the sophomore year has either attained an over-all grade point average of 2.5 or who has attained a grade point average of 2.75 in his major and not less than 2.0 in fields outside his major, and who has received the approval of his department or departments, may elect the honors program. Such election will enable the student to pursue a special program as outlined below. Any student who feels that his qualifications approximate closely the scholarship standards stated above may request admission to the honors program, subject to the approval of his department or departments, and the Committee on Honors.

Any student who wishes to apply for entrance into the honors program may do so by filling out cards to be obtained from the Registrar's Office. The application should be approved by the 10th calendar day following the first day of instruction. Units earned by students doing individual study under this plan will be recorded under the symbol 166 and will be subject to the formulated rules dealing with limitations of student load.

Students in the honors program, so far as the facilities of the department and the best interests of the students under its charge allow, shall be treated as benefits their individual needs and as their individual capabilities warrant. They shall be eligible to enroll in honors or special study courses, credit in such courses to be limited to six units per semester unless otherwise recommended by the major department or departments and approved by the Honors Committee. In addition, they shall not be held to regular attendance in the established courses of their departments if, in the opinion of the instructor, the objectives of such courses can be achieved through special assignments and examinations. With the consent of the major department or departments, requirements concerning minors and specific courses or sequences in the major may be modified. Each honor student shall be assigned to a member of his major department for advice and direction.

Students in the honors program who fail to take advantage of the opportunities there offered may at the end of any semester be required to withdraw from the honors program upon notification of the major department or departments. Students not in the honors program who show unusual capacity, may request to be transferred to the honors program contingent upon recommendation of the department and the Committee on Honors at the end of any semester.

DEGREE WITH HONORS

With the approval of the faculty, graduation with honors shall be granted to those students in each graduating class who have done highly superior work as shown by high grade point averages.

DEGREE WITH DISTINCTION IN THE MAJOR

Upon recommendation of his major department and with the approval of the faculty, a student doing superior work in his major field may be graduated with distinction in that field.

FINAL EXAMINATIONS

No final examination shall be given to individual students before the regular time. Any student who finds it impossible to take a final examination on the date scheduled must make arrangements with the instructor to have an incomplete grade reported and must take the deferred final examination within the time allowed for making up incomplete grades.

CREDIT BY EXAMINATION

Credit may be earned by examination under the following conditions: (1) the student must be a fully matriculated bona fide resident student enrolled in a regular semester at the college at the time the examination is administered; (2) approval to take the examination must be obtained from the Dean of Instruction and from the chairman of the department concerned, prior to the administration of the examination; and (3) the student must pay the additional fees, if needed, to qualify as a regular student.

CREDIT FOR EXTENSION COURSES

The maximum amount of extension credit which may be accepted toward the minimum requirements for the bachelor's degree is 24 semester units, not more than 12 of which may be transferred from another college or university except that courses taken through the United States Armed Forces Institute, or other official military correspondence schools, shall not be included within these limits. The term "extension credit" refers to both extension class work and work taken by correspondence. Extension credit does not count in satisfaction of the minimum residence requirement. **Extension courses are not accepted for credit toward the master's degree.**

CREDIT GRANTED FOR MILITARY SERVICE

The college is guided by the recommendations of the American Council on Education in granting undergraduate credit toward the bachelor's degree for military service. Postgraduate credit is not granted.

To obtain credit for military service, the student must be fully matriculated and enrolled in the college and must file a photostat of the military separation form DD-214, or equivalent official records. These records should be submitted at the time of applying for admission to the college.

TRANSFER TO GRADUATE SCHOOLS

Attention of students who plan to transfer to the graduate school of the University of California is called to the fact that the university reserves the right to evaluate and possibly reduce the credit in certain work in which this college has given credit toward the baccalaureate. Examples of such work would be credit for nurse's training, credit transferred from certain foreign schools, certain vocational courses in junior colleges, credit for military service, and courses in this college of a nonacademic nature.

THE MASTER OF ARTS DEGREE

NATURE OF THE DEGREE

The master of arts degree is offered at San Diego State College in the field of teaching and for other teaching and supervisory services. Students receiving the degree for school service must hold a valid regular day school service California credential other than a provisional credential; or be a foreign citizen preparing to teach in foreign countries; or be a licensed teacher from another state with one year of experience. The master's degree is also offered in specified curricula for approved applicants preparing to teach in institutions not requiring teaching credentials, provided that a minimum of 12 units in professional education be included in their graduate year. Students may elect to concentrate in a subject matter major, in education, or in personnel supervision and training. The following areas of concentration are now available:

Teaching Majors: Art, business education, chemistry, English, foreign language (Romance Language, French, and Spanish), health and physical education, history, industrial arts, life science (botany and zoology), mathematics, music, physics, social science, and speech arts.

Education: Audio-visual education, elementary education, secondary education, elementary administration, secondary administration, elementary supervision, secondary supervision, pupil personnel services, and special education.

Psychological Service: Psychology and educational psychology.

Personnel Supervision and Training: For instructional and supervisory service in business, government, and industry.

REQUIREMENTS

Students who meet the following requirements are eligible for graduation with the master's degree:

A. A minimum of 30 units of approved graduate work beyond the bachelor's degree. Thirty units must be completed within the seven year period immediately preceding the date when all of the requirements for the degree are completed. For justifiable reasons, the college may extend this period.

B. 24 units in residence. Courses taken prior to the summer session of 1946 at San Diego State College, or any other California state college, may **NOT** be used as graduate work.

C. Grade point average of 2.0. Only grades of A, B, and C are acceptable toward the master's degree. (Marking system: Grade of A, 3 grade points; B, 2 grade points; C, 1 grade point; D, 0 grade points.)

D. Completion of the requirements for an approved California teaching credential, or the holding of one, such as the general elementary, general secondary, junior high, and special secondary school credentials, or the school psychometrist credential (which will be discontinued on September 15, 1956); or be a foreign citizen preparing to teach; or be a licensed teacher in another state, with verification of one year of successful teaching experience; or be preparing to teach or supervise in an institution which does not require a credential, provided the work is taken in such a curriculum as offered by this college. The degree is not offered to students preparing to teach in colleges or universities.

E. Satisfactory completion of the candidate's degree program as approved by the Graduate Council.

F. Satisfactory completion of a thesis or project, except in business education, and foreign language, which require a comprehensive examination. (Refer to paragraph D under General Regulations below.)

ADMISSION TO GRADUATE STUDY

A. Graduate status may be granted to applicants who have regularly applied and have filed official transcripts at the Office of Admissions as evidence of their possession of a bachelor's degree from an accredited institution. (Two transcripts must be filed by students who expect to become candidates for the master's degree.)

B. Provisional admission to graduate study (graduate special status) may be granted to one who holds a bachelor's degree from a nonaccredited college. Such a student will be eligible for graduate status when he has earned a grade point average of 1.5 on 12 or more units of approved upper division work at this college and has cleared all undergraduate deficiencies. Special status is given also to those students who have not completed the regular admission procedures.

C. Apply at the Office of Admissions for admission to the college. For further details, refer to the section of the catalog on admission and registration.

ADMISSION TO CANDIDACY

In addition to application for regular admission to the college, a candidate for the master's degree must qualify as follows:

A. Apply for admission to candidacy at the Graduate Office at the beginning of the first graduate term in attendance. Admission cannot be completed, however, until the student has earned 12 units at San Diego State College, or six units if his undergraduate grade point average was 1.5 or better.

B. Earn and maintain a grade point average of 2.0 on graduate work.

C. Satisfactorily complete the following: (a) scholastic aptitude test for graduates, (b) scholastic achievement test, and (c) such departmental tests as may be required.

D. File with the Graduate Office a complete program of study, which has been approved by the adviser.

E. Receive approval of candidate's major department.

GENERAL REGULATIONS

A. Extension and correspondence courses are not acceptable toward the degree.

B. Maximum study load: Summer session, one unit per week of attendance; fall or spring, 15 units per semester of full-time attendance. Students employed full time may take a maximum of three units of courses numbered 200-298 and two additional units of courses numbered 100-199; or six units of courses numbered 100-199. Any courses in excess of these amounts must be approved in advance by the Chairman of Graduate Studies.

C. All candidates who are taking the degree with school service credentials must complete two units in Education 290 and one additional unit in a course in bibliography (290) in the major department. Candidates preparing to teach or supervise in institutions that do not require a credential will substitute an approved course in procedures of investigation and report.

D. Plan A is available to all majors in which the degree is offered. Three units of credit are granted for the project or thesis upon its acceptance by the committee. Plan B is available in the Departments of Business Education, Education, and Foreign Language. Under Plan B a project or thesis is not required, but the candidate must pass a comprehensive examination. In foreign language a candidate must complete eight units in Foreign Language 200-298. Candidates in education, upon passing the comprehensive examination, will become eligible to take Education 295A-B, a writing seminar required in their major concentration.

Candidates choosing Plan B should secure dates of comprehensive examinations from their respective departments.

E. The minimum requirement for a concentration in a major shall be: (1) eight units of courses numbered 200-299, which may include credit for a project or thesis and one unit in bibliography (except in English which requires two units), and (2) six additional units in the major or an approved related field, selected from upper division or graduate courses. Candidates who are preparing to teach or supervise in institutions which do not require a teaching credential must take 12 units in education courses.

F. 12 units of work must be earned after admission to candidacy.

G. 10 units must be in courses numbered 200-299.

H. Two official conferences between the student and his thesis committee are required: one for planning, which is to be held immediately after the appointment of the committee, and one for evaluation at the time of completing the first draft of the thesis.

I. A project or thesis, when required, must be completed four weeks in advance of the date of the convocation at which the degree is to be conferred.

J. An application for graduation must be filed at the Graduate Office four weeks before the date of graduation.

K. Candidates are advised to keep in touch with the Graduate Office concerning specific requirements for the typing of the project or thesis and final dates for submitting bound copies, dates of graduation, and other routine procedures concerning the degree.

GENERAL REQUIREMENTS FOR THE BACHELOR OF ARTS AND BACHELOR OF SCIENCE DEGREES

TYPES OF CURRICULA

San Diego State College offers the following types of curricula:

(1) Teacher education, leading to a degree and/or teaching credential.
(2) Arts and Sciences curricula, leading to a degree.
(3) Occupational curricula, leading to a degree or certificate.
(4) Preprofessional curricula, leading to admission to professional schools.

GRADUATION REQUIREMENTS

(a) A minimum of 124 semester units for the A.B. degree or 128 semester units for the B.S. degree, representing a four-year college course, is required for graduation.

(b) The last 24 units of work leading to the bachelor's degree must be completed at this college, including registration in at least two semesters, or summer session equivalent on a week-for-week and unit-for-unit basis, for a total of 36 weeks of attendance.

(c) At least a C average (1.0) in scholarship is required in all college work attempted, in all work taken at this college, and in all upper division work in the major field.

(d) At least 40 upper division units are required for the A.B. degree or at least 36 upper division units for the B.S. degree.

(e) The state requirements in American history, institutions, and ideals, United States Constitution, and California state and local government must be completed for the bachelor's degree.

(f) All requirements in general education, the major and minor fields and any other requirements made by the college must be completed for graduation.

TESTS IN ENGLISH, MATHEMATICS, AND SPEECH

Each student must demonstrate competence in the use of English, mathematics, and speech as determined by tests administered by the college. Students failing to pass these tests satisfactorily are required to enroll in special remedial courses designated by each department concerned. Passing the tests or completion of designated courses is a requirement for graduation.

AMERICAN HISTORY, INSTITUTIONS AND IDEALS, UNITED STATES CONSTITUTION, AND CALIFORNIA GOVERNMENT

Each student of a state college to qualify for graduation shall demonstrate competence in the Constitution of the United States, and in American history, including the study of American institutions and ideals, and of the principles of state and local government established under the Constitution of this State, by completing appropriate courses, or by passing a comprehensive examination on these fields prepared and administered by each college. Students transferring from other institutions of collegiate grade, who have already met this requirement in college, shall not be required to take further courses or examinations therein.

This graduation requirement may be fulfilled by any one of the following alternatives:

(1) By satisfactorily passing comprehensive examinations in American history, institutions and ideals; in the United States Constitution and Federal Government; and in California state and local government. Students applying to take these examinations may obtain a bibliography of suggested reading at the Evaluations Office in the Administration Building.

(2) By satisfactory completion of one of the following groups of courses:

(a) History 17A and 17B
(b) History 172A and 172B
(c) Political Science 71A and 71B
(d) Political Science 139A and 139B

(3) By satisfactorily passing a comprehensive examination in American history, institutions and ideals and completion of one of the following groups of courses:

(a) Political Science 101
(b) Political Science 137A and 137B

(4) By satisfactorily passing a comprehensive examination in the United States Constitution and Federal Government and in the principals of California state and local government, and completion of one of the following groups of courses:

(a) History 8A and 8B
(b) History 179A and 179B

(5) By completion of one of the following groups of courses covering American history, institutions and ideals and completion of one of the following groups of courses covering the United States Constitution and principles of California government:

Courses on U. S. History	*Courses on U. S. Constitution and California Government*
(a) History 8A and 8B	(a) Political science 101
(b) History 179A and 179B	(b) Political Science 137A and 137B

(6) By completion of the graduation requirement in American history, institutions and ideals, the United States Constitution, and principles of California government in other institutions of collegiate grade.

REQUIREMENT IN CALIFORNIA STATE AND LOCAL GOVERNMENT

Students who have met the graduation requirements in American history, institutions and ideals and in the Constitution of the United States by completion of courses in institutions of collegiate grade outside the State of California, but who have not met the graduation requirement in principles of California state and local government, may satisfy this requirement by satisfactory completion of one of the following courses:

(a) Political Science 142 (also numbered under Journalism)
(b) Political Science 143 (also numbered under Journalism)
(c) Political Science 101 (provided that this course is not a repetition of a course taken elsewhere)
(d) Political Science 71B or 139 B (provided that the course is not a repetition of a course taken elsewhere)
(e) History 17B or 172B (provided that the course is not a repetition of a course taken elsewhere)
(f) History 189

LOWER DIVISION AND UPPER DIVISION COURSES

A student is considered to have lower division standing until he has earned 60 semester units, at which time he attains upper division standing.

Courses numbered 1-99 are lower division courses; courses numbered 100-199 are upper division courses.

A student with lower division standing is not eligible to take upper division courses, with the following exceptions: A student in the last semester of his sophomore year who is approaching upper division standing carrying sufficient lower division units to complete the required minimum of 60 units may carry upper division units for the remainder of his study load. A student with sophomore standing may carry upper division courses for upper division credit provided that he has the written approval of the chairman of the department and the Dean of Instruction. This written approval must be filed in the Office of the Registrar on the form "Adjustment of Academic Record." Blank forms may be obtained by the student at the Evaluations Office.

GENERAL EDUCATION REQUIREMENTS

Forty-five semester units in courses designated in the college catalog and in the schedule of classes as general education must be completed in addition to courses in the major field, unless such courses are ones specifically required of all students as part of the general education program. These courses must be selected from the fields listed below with completion of the minimum number of units required and not exceeding the maximum number of units allowed in each field in order to satisfy the requirement of 45 units in general education. The pattern requirements in general education may be fulfilled by examinations with an accompanying reduction in the 45 units but without course credit. Permission to take such examinations must be obtained from the Dean of Instruction.

General education courses may be found in the section of the catalog under Announcement of Courses. The course numbers are preceded by an asterisk (*).

For specific explanation of the requirements within each field of general education, refer to the explanation of requirements below.

	Minimum	*Maximum*
(a) Social Sciences	9	12
(b) Natural Sciences	9	12
(c) Literature, Philosophy, and the Arts	6	12
(d) Communication:		
Oral Communication	2	2
Written Communication	3	6
(e) Psychology	3	6
(f) Physical and Health Education:		
Physical Education	2	2
Health Education	2	2
(g) Mathematics	0	6
(h) Foreign Languages	0	6
(i) Family Life Education	0	6
(j) Air Science and Tactics	0	6
Total number of units required	45	

EXPLANATION OF REQUIREMENTS

(a) **Social Sciences:** A minimum of nine or maximum of 12 units must be selected from general education courses with at least three units in two or more of the following fields: anthropology, economics, geography (except Geography 1), history, political science, and sociology, including the required instruction in United States history, Constitution, and American ideals, and in California state and local government.

Note: Courses in business, library science, philosophy, or psychology may not be used to satisfy the social science requirement.

(b) **Natural Sciences:** A minimum of nine or maximum of 12 units must be selected from general education courses in the natural sciences. At least one general education course of not less than three units must be selected in the life sciences (biology) and at least one course of not less than three units in the physical sciences (astronomy, chemistry, Geography 1, geology, physical science, and physics). At least one unit of either physical or life science or the three-hour equivalent must represent laboratory work.

Note: Courses in engineering, industrial arts, and mathematics may not be used to satisfy the natural science or laboratory requirement.

(c) **Literature, Philosophy, and the Arts:** A minimum of six or maximum of 12 units must be selected from general education courses in literature, philosophy, and the arts. At least one course of not less than three units must be selected in literature or in philosophy from courses in English, comparative literature, philosophy, or similar fields. Twelve units may be concentrated in either English or philosophy, but not in the arts. Courses in the arts must be selected from the fine arts, including aesthetics, art, and music, or from the practical arts. A maximum of three units may be counted in the practical arts toward general education.

(d) **Oral and Written Communication:** Two units must be completed in oral communication by passing Speech Arts 3. Students failing the Speech Interview are required to register concurrently in Speech Arts 2, Oral Communication Laboratory, for one unit of credit which may not be counted toward general education requirements.

A minimum of three units, with a maximum of six units, must be selected from courses in written communication. All students must complete three units in English 1. Students failing the English Test are required to complete English A for three units as a prerequisite for other courses in English. English A may not be counted toward general education requirements.

(e) **Psychology:** Three units must be completed in Psychology 1. An additional three units may be selected from other general education courses in psychology.

(f) **Physical Education and Health Education:** Two units must be completed in Health Education 21 and two units must be selected from general education courses in physical education.

The physical education requirement must be satisfied by completion of four semesters of activity courses for a minimum and maximum of two units. **Note:** Not more than one activity course may be counted within any semester and an activity course may not be repeated for credit.

(g) **Mathematics:** From zero to six units may be selected from general education courses in mathematics. Students failing the Mathematics Test must complete Mathematics X. This course may not be counted toward the general education requirements.

(h) **Foreign Languages:** From zero to six units may be selected from general education courses in foreign languages. **Note:** Year-courses in foreign languages completed in high school may not be repeated in college for credit, except that the last year-course in any foreign language sequence completed in high school may be repeated in college for a maximum of three units of repeated work to be applied toward graduation.

(i) **Family Life Education:** From zero to six units may be selected from general education courses in family life education. Courses in family life education may be found in the fields of business, health education, home economics, psychology, and sociology.

(j) **Air Science:** Two units will be granted for completion of Air Science 1A and two units for 1B. Two additional units will be granted for completion of Air Science 141A. These six units correspond to the parts of the AFROTC program which lie in the areas of social science, natural science, communication, and other areas of the general education pattern; however, these units will not be included within the unit minima or maxima specified in any such area.

BACHELOR OF ARTS DEGREE IN ARTS AND SCIENCES

MAJOR REQUIREMENTS

One major field is required for the A.B. degree in addition to 45 units in general education courses. At least 40 units of the 124 required for graduation must be in courses carrying upper division credit.

The major in arts and sciences consists of the total number of upper division units and the specific courses prescribed in each major field. Also included in requirements for the major are lower division prerequisites. Some majors require a minor approved by the major department. For specific information on majors, refer to the section of the catalog on Announcement of Courses.

MAJORS

Majors in arts and sciences are offered in the following fields:

- Art
- Bacteriology
- Botany
- Chemistry
- Economics
- English
- French
- Geography
- Geology
- History
- Home Economics
- Industrial Arts
- Journalism
- Language Arts
- Life Science
- Mathematics
- Music
- Personnel Management
- Philosophy
- Physical Education
- Physical Science
- Physics
- Political Science
- Psychology
- Public Administration
- Public Personnel Management
- Recreation
- Romance Languages
- Social Science
- Social Service (Presocial Work)
- Sociology
- Spanish
- Speech Arts
- Zoology

THE GENERAL MAJOR

The general major offers an opportunity for students to obtain a general type of training leading to occupational objectives not otherwise provided in the regular curricular programs available in the college. Three of these general majors, home arts, inter-American relations, and prelegal, are described elsewhere in the catalog. (Refer to the Index.) Students not electing one of these curricula who need this general type of training must follow the procedure outlined below.

In addition to the general education requirements, a student taking the general major must complete 36 upper division units chosen from three fields with not more than 15 units nor fewer than nine units from any one field. A minimum of a year course in each field must be completed in the lower division as foundation for upper division work in the general major. A minor is not required; however, four additional upper division elective units must be completed to meet the minimum requirement of 40 upper division units for graduation.

All students following the pattern for the general major must obtain forms from the Personnel Services Center after consultation with one of its counselors. The forms will then be submitted to the chairman, or his delegated representative, of each of the three departments comprising the general major by the student for approval, revision or rejection. After final approval by the Dean of Instruction has been obtained, the student must present two copies of his program to the Personnel Services Center in order to be officially enrolled in this program.

MINOR REQUIREMENTS

A minor in arts and sciences may be required by the department offering the major. In departments not requiring a minor, the minor is optional with the student. A minor generally consists of a minimum of 15 units, or maximum of 22, six to nine units of which must be in courses carrying upper division credit as specified by the department. A few minors may exceed the 22 unit maximum. The minor may include courses which are also included in the general education requirements.

MINORS

Minors in arts and sciences are offered in the following fields:

- Air Science
- Anthropology
- Art
- Astronomy
- Bacteriology
- Botany
- Business
- Chemistry
- Comparative Literature
- Economics
- Education
- Engineering
- English
- French
- Geography
- Geology
- German
- Health Education
- History
- Home Economics
- Industrial Arts
- Journalism
- Life Science
- Mathematics
- Music
- Philosophy
- Physical Education
- Physical Science
- Physics
- Political Science
- Psychology
- Public Administration
- Recreation
- Secretarial Management
- Sociology
- Spanish
- Speech Arts
- Zoology

BACHELOR OF SCIENCE DEGREE IN ARTS AND SCIENCES

REQUIREMENTS FOR THE MAJOR

One major field is required for the B.S. degree in addition to 45 units in general education courses. A minimum of 128 units is required for graduation. A minor field is not required.

The major consists of a minimum of 36 upper division units with prerequisites and related courses in the lower division as prescribed by the department offering the major. These lower division courses are considered part of the major and may not be counted toward the 45 units in general education, except as may be specified in each major field.

MAJORS

Majors in arts and sciences are offered in the following fields:

Science

Bacteriology
Botany
Chemistry
Engineering
Laboratory Technique
Life Science
Nursing
Physics
Zoology

Business

Accounting
Banking and Finance
Business Management
Credit Management
* Engineering Management
General Business
Industrial Management
Insurance
Marketing
Office Management
Secretarial Management

* Engineering Management is offered as a major for students who have graduated in industrial engineering. Refer to the sections of this catalog under Business and under Engineering for more specific information.

PREPROFESSIONAL CURRICULA

Preprofessional curricula, which usually require three or four years of collegiate work, are offered. Curricular outlines of preprofessional study, which are presented on the following pages, meet the typical requirements for admission to professional schools. Students expecting to complete their professional training at other institutions should modify the suggested outlines of study to meet the requirements of the professional schools of their choice. Curricular outlines are presented for predental, prelegal, and premedical programs. Students planning to enter other professional fields, such as agriculture, forestry, optometry, pharmacy, veterinary science, may obtain assistance from faculty advisers in arranging appropriate preprofessional courses of study.

PREDENTAL CURRICULUM

Candidates for a degree in dentistry should ascertain the entrance requirements of the dental college to which they expect to transfer and should make whatever changes in the following typical requirements that may seem desirable in satisfying the requirements of the specific dental college.

The curriculum for dental hygiene is essentially the same as for predentistry.

High school students planning to enter dentistry should include in the high school program the following subjects: Elementary algebra, plane geometry, intermediate algebra, chemistry, physics, mechanical drawing, and three units in one foreign language if required by the college to which a student expects to transfer.

Course of Study for Predental Curriculum: Freshman year, physical education activities, Health Education 21, Speech Arts 3, English 1, English 2 or other literature course, Mathematics C and D, Chemistry 1A-1B, Zoology 1 (32 units); sophomore year, physical education activities, Psychology 1, Chemistry 5A, Physics 2A-2B and 3A-3B, Botany 1, Biology 15, social science including courses in U. S. history, Constitution, and California government (30 units).

The following courses for a third year in preparation for dentistry are suggested for students who fail to receive acceptance from a dental college after completing the prescribed 60 units: Chemistry 101A-101B; Zoology 100 and 106; Art 119A, Psychology 11; additional courses in general education.

PRELEGAL CURRICULUM

The following curriculum is designed to meet the requirements of standard American schools of law for a broad and liberal education, while at the same time providing desirable flexibility in the individual programs. There are two patterns of concentration which will usually be indicated for the prelegal student, either of which may be selected, in consultation with the adviser, to fit best the interests of the student. These are the major-minor pattern and the general major pattern. Subject to individual variation, the fields of economics, history, and political science should receive first consideration when choosing the pattern of concentration as being the most effective background for later professional study in law and for possible activities in the field of business.

RECOMMENDED COURSE OF STUDY FOR PRELEGAL CURRICULUM

Lower division: Business 14A-14B, Economics 1A-1B, Political Science 1A-1B or 71A-71B, and a year course in history. Upper division: In the junior and senior years the student will plan his course with the counsel of his adviser in terms of the field of law in which he plans to work, but keeping in mind the entrance requirements and examinations for admission to schools of law. The recommended list below should receive prime consideration by all prelegal students in the selection of courses, though it is to be thought of as flexible in accordance with student needs.

Recommended: Business 160A; Economics 131, 133, 150, 170; History 151A-151B, 175A-175B; Political Science 111A-111B, 139A-139B.

Twelve units of lower division courses in social science may be counted toward the general education requirements in social science.

Beyond the courses taken in the fields of concentration, the upper division electives may well be used for work in the fields of English, philosophy, psychology, sociology, or speech arts, as the student may decide, in consultation with his adviser. A mastery of English expression is essential. The approval of the prelegal adviser is required for all master plans. If the general major pattern of concentration is chosen, a copy of the master plan is to be filed with the Evaluations Office.

PREMEDICAL CURRICULUM

The entrance requirements of medical colleges ordinarily range from three to four years of premedical work. The lower division requirements of the liberal arts curricula include the general requirements of standard medical colleges and should therefore be met in full whether the curriculum extends over a period of three or of four years. All plans for premedical work should include an arrangement of courses to meet the requirements of the medical college which the student expects to enter.

Students ordinarily elect to concentrate in chemistry and zoology with a major in one and a minor in the other. Requirements for these majors and minors are described under these departments.

High school students planning to enter medicine should include in the high school program the following subjects: Elementary algebra, plane geometry, intermediate algebra, chemistry, physics, two or three years of French or German. Two years of Latin also recommended.

Course of study for premedical curriculum in addition to general education requirements:

Freshman year: Chemistry 1A-1B, Zoology 1 or Physics 2A-2B, 3A-3B.

Sophomore year: Chemistry 5A, Physics 2A-2B, 3A-3B or Zoology 1, and foreign language.

Junior year: Chemistry 101A-101B, foreign language to 12 units, Zoology 100 and 106.

Senior year: Completion of requirements for graduation with a major preferably in chemistry or zoology.

Students should consult with the adviser in the premedical curriculum for selection and arrangement of courses.

PROFESSIONAL CURRICULA IN TEACHER EDUCATION

ADMISSION TO TEACHER EDUCATION

Students who plan to earn credentials for teaching or other school service should apply for admission to teacher education during either the second semester of the freshman year or the first semester of the sophomore year. Students entering the college at the end of the sophomore year will apply at the beginning of the junior year. Application may be made at a special meeting held each semester. (For date and place of this meeting, see "Application for Admission to Teacher Education" in the calendar of this catalog.) No courses in education may be taken until admission is granted; any exception to this rule must have the approval of the appropriate admissions committee.

The standards for admission to teacher education are different from those for admission to the college; therefore, admission to the college does not guarantee that the student will be admitted to teacher education. The committees on admission to teacher education will base their decision upon the following factors:

1. A satisfactory score on the college aptitude test taken at the college.
2. Competence in the use of English and satisfactory ability in arithmetic, handwriting, reading and spelling as indicated by scores on fundamentals tests. (See college calendar for dates of these tests which should be taken in the second semester of the freshman year.)
3. Satisfactory scores on the general culture test in the case of candidates for junior high school, special secondary, general secondary, or school psychometrist credentials. (See college calendar for dates of this test, which should be taken in the second semester of the sophomore year.)
4. Quality of speech habits and voice control as indicated by the satisfactory completion of a speech test given at the college or satisfactory completion of a course in corrective speech.
5. Results of the college health examination given for teaching credential candidates.
6. Interviews with representatives of the Admissions Committee and with a representative of the department in which the student is a major. The interviewing committee will base its evaluation upon the following factors established by the State Board of Education: intelligence, scholarship, professional aptitude, personality and character, speech and language usage, and many-sided interests.
7. Satisfactory grade point averages on the first two years or more of a given curriculum or its equivalent and on all subsequent work taken for the credential. Minimum grade point averages are indicated below:
    a. Elementary, kindergarten-primary, special secondary credentials, 1.2.
    b. General secondary credential: all subjects, 1.5, and major field, 1.75.
    c. Junior high school and school psychometrist credentials, 1.5.
8. For administration and supervision credential candidates, a satisfactory grade point average (minimum 1.75) on all work applicable to that credential, exclusive of the work applied to the basic credential.
9. For general secondary credential candidates, an official evaluation and program approved by the authorized departmental representative in the student's major field and by a representative in secondary education.

TRANSFER STUDENTS

Students who have completed two or more semesters of work in another college, upon transferring to San Diego State College, should make application for admission to teacher education as soon as they enroll in the college. Transfer students admitted to the college with either upper division or graduate standing must take the necessary tests for admission to teacher education given during the testing and advising program before the beginning of their first semester at the college. (See college calendar for dates.)

TRANSFER STUDENTS WITH PROVISIONAL CREDENTIALS

Teachers with a provisional credential who are teaching and working concurrently toward a regular credential may have a program designed to fit their background. According to present law, teachers on provisional credentials are required to embark upon a program with an accredited institution leading to a degree and/or a credential before the provisional credential can be renewed. Also, before the renewal can be certified by San Diego State College, the student must be fully matriculated in the college and must complete admission to teacher education. (Refer to the requirements stated above for admission to teacher education.) For an evaluation of college credit completed to date, make formal application at the Evaluations Office, Administration Building, San Diego State College. For additional details, see the coordinator of elementary education or the coordinator of secondary educatoin.

ADVANCED STANDING IN TEACHER EDUCATION

A student transferring into San Diego State College with advanced standing must complete a minimum of six units of professional education work in residence at San Diego State College before recommendation for a credential, regardless of extent of education work already completed elsewhere. Whenever a transfer student has had teaching experience, the college requires that a statement from the employer(s) be filed with the Evaluations Office.

EVALUATION OF CREDITS

After an interval of five years, courses in education are re-evaluated and subject to reduction in credit, in light of such new requirements as may have been put into effect and changes in educational procedures. Students formerly in attendance will not be considered to be working in the curriculum until an evaluation and statement of credit has been secured from the Evaluations Office. All courses taken either at this college or elsewhere must be approved by an official adviser in order to be credited toward meeting credential requirements or pattern requirements for a degree.

TEACHING CREDENTIALS

San Diego State College is authorized by the State of California to recommend students for the teaching credentials listed below. To be recommended, students must complete, or have completed, the bachelor's degree in one of the curricula offered for teachers.

The credential	*Subjects and grades for which it is valid*
General elementary	Kindergarten through grade 8.
Kindergarten-Primary	Kindergarten through third.
Junior High. A special program is offered in combination with the General Elementary Credential	All subjects in grades 7, 8, and 9 in all elementary or secondary schools.
General Secondary	All subjects in the public schools in grade 7 through 14.
Special Secondary in Art	Art in all grades of the public schools.
Special Secondary in Business Education	Business education subjects in all grades of the public schools.
Special Secondary in Industrial Arts	Industrial Arts in all grades of the public schools.
Special Secondary in Music	Music in all grades of the public schools.
Special Secondary in Physical Education	Physical education in all grades of the public schools.
Special Secondary in Speech Arts	Speech in all grades of the public schools.

Special Secondary in Correction of Speech Defects	Correction of speech defects in all grades of the public schools.
Special Secondary for Teaching the Mentally Retarded Child	Teaching mentally retarded children in all grades of the public schools.
* School Psychologist	To serve as school psychologist.
* School Psychometrist	To serve as assistant to the school psychologist.
Administration in Elementary Education	Authorizes to serve as superintendent, deputy superintendent, assistant superintendent, principal, vice-principal, and supervisor of instruction in elementary schools.
Supervision in Elementary Education	Authorizes to supervise instruction in elementary schools.
Administration in Secondary Education	Authorizes to serve as superintendent, deputy superintendent, assistant superintendent, principal, vice-principal, and supervisor of instruction in secondary schools.
Supervision in Secondary Education	Authorizes to supervise instruction in secondary schools.
Special Subject Supervision	Supervision in the special subject in all grades.

COMBINATION OF CREDENTIALS

Students who seek more than one teaching credential must complete in full the curriculum for each, with only such exceptions as are indicated in the statement of requirements.

A combination of the elementary school credential and the junior high school credential may be secured by completing the requirements for the elementary school credential and the following additional requirements.

(a) A junior high school teaching major and teaching minor.
(b) Education 100B in the major field or equivalent elementary education course.
(c) Three units of directed teaching, or equivalent, in a junior high school.
(d) Education 115B or 184A.

A combined program leading to the junior high school and general elementary credentials is available. Entering students interested in such a program should request an adviser for the junior high school credential.

A combination of the junior high school credential and a special secondary credential may be secured by completing the requirements for the special secondary credential and the following additional requirements:

(a) A junior high school teaching minor.
(b) Education 100B in the junior high school teaching minor.
(c) Three units of student teaching in the junior high school teaching minor.

The general elementary credential and the special secondary credential in the Correction of Speech Defects may be combined by (1) completing a speech minor, (2) directed teaching in speech correction, and (3) completing additional upper division requirements in speech, education, and psychology.

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* After September 15, 1956, these credentials will be superseded by the General Pupil Personnel Services credential. For details, see the Secondary Education office.

GENERAL ELEMENTARY AND KINDERGARTEN-PRIMARY CREDENTIALS WITH THE BACHELOR OF ARTS DEGREE

The general elementary and kindergarten-primary credentials are granted with the A.B. degree in teacher education. All elementary education students must complete requirements for the general elementary credential. Those who wish to specialize further in kindergarten-primary education may elect courses leading to the additional credential.

Requirements for the general elementary and kindergarten-primary credentials overlap with the following exceptions: Kindergarten-primary practicum, piano, and directed teaching in the kindergarten. These courses may be taken as part of the 124 units required for a general elementary credential.

Curricular outlines for both credentials may be obtained from the Coordinator of Elementary Education.

Summary of unit requirements:

	Units
General education	45
Major in education	39–43
Additional units, including minor and pattern requirements for the credential	36–40
Total number of units required for graduation	124

MAJOR FOR THE GENERAL ELEMENTARY CREDENTIAL

The major consists of 39 upper division units to include the following courses: Education 102A-102B (6 units); Education 147 (13 units); Education 148 (7 units); Education 130 (2 units); Education 115A (2 units); Education 116A (7 units); and Health Education 151 (2 units).

Lower division background courses for the credential include the following courses (or equivalents); *Geography 1, Physical Geography; *Geography 2, Cultural Regions; *Music 7A, Musicianship; Music 7B, Music Materials for the Elementary School; *Art 6A, Design; Art 6B, Design; Art 61A, Crafts in the Elementary Schools; and Physical Education 53, Physical Education in the Elementary School. (Courses preceded by an asterisk (*) may be counted in general education requirements.)

MAJOR FOR THE GENERAL ELEMENTARY AND THE KINDERGARTEN-PRIMARY CREDENTIAL

The major consists of those courses required for the general elementary credential with the addition of kindergarten-primary practicum, Education 146 (4 units).

Lower division background requirements are the same as for the general elementary credential with the addition of piano, Music 10A-10B, or equivalent.

MINOR

A teaching minor for the general elementary and kindergarten-primary credentials consists of a minimum of 15 units in one field, six units of which must be in courses carrying upper division credit. Minors are offered in the following fields.

English
Foreign Languages
General Science
Industrial Arts
Mathematics
Physical Education
Social Science
Speech Arts

The *minor in English* must include three units in American literature.

The *minor in foreign languages* may be in one or more of the foreign language fields.

The *minor in general science* shall consist of laboratory courses in Biology 3 and 4 or approved equivalents, and Physical Science 1 and 2 or equivalents, plus six upper division units chosen from Biology 160, Botany 119-S, Industrial Arts 185, 186, Physics 148, and Zoology 119-S and 165.

The *minor in industrial arts* consists of 20 units to include Industrial Arts 11, 21, and 122, and one lower division and one upper division course in *each of two* of the following areas: general woodworking, general metalworking, electricity-radio, transportation, and graphic arts. Electives should be chosen in consultation with the adviser in industrial arts.

The *minors in mathematics and physical education* are the same as the arts and sciences minors described under the respective departments. Students are advised to select courses in these minors in consultation with the departmental adviser.

The *minor in social science* must include upper division units in history and/or geography for a minimum of six units. Further work to complete the minor may be in either lower or upper division, selected from anthropology, economics, geography, history, political science or sociology.

The *minor in speech arts* is the same as the arts and sciences minor described under the department. This minor is open to students in the general elementary or the kindergarten-primary credential curriculum.

A second minor, though not required, may be chosen from art, health education, home economics, music, or recreation.

Students taking the general elementary in combination with a special secondary credential may use the special secondary major for the minor in the elementary field.

JUNIOR HIGH SCHOOL CREDENTIAL WITH THE BACHELOR OF ARTS DEGREE

The junior high school credential is granted with the A.B. degree in teacher education. It is offered to students with minors in home economics or industrial arts and is recommended in combination with the general elementary or special secondary credential. Students wishing to secure the junior high school credential under conditions other than these should see the Coordinator of Secondary Education for approval of the program.

One teaching major, in addition to 45 units in general education courses, and one teaching minor are required of all students taking this credential. Students not taking this credential in combination with another credential are required to complete 24 units in professional education courses. Students taking this credential in combination with another credential should refer to the section of the catalog entitled: Combination of Credentials.

TEACHING MAJORS AND MINORS

Teaching majors and teaching minors are offered in the following fields:

Teaching Majors	*Teaching Minors*
English	Home Economics
Foreign Languages	Industrial Arts
General Science	or
Mathematics	The special secondary field major when the combination credentials are earned
Social Science	

Summary of unit requirements:	*Units*
General education	45
Teaching major (minimum requirements)	24
Teaching minor	17-20
Professional courses in education	24
Electives	11-14
Total number of units required for graduation	124

TEACHING MAJOR

A *teaching major* consists of 24 to 33 units as specified below. Courses in the major are in addition to the 45 units required in general education courses, unless otherwise indicated.

A *teaching major in English* shall consist of six units in a lower division year-course, and 18 units in English courses carrying upper division credit, including three units in American literature and three units in Shakespeare. Recommended as part of the major: English 192.

A *teaching major in foreign languages* may include one or more of the foreign languages for a minimum of 24 units, 18 units of which must be in courses carrying upper division credit.

A *teaching major in general science* shall consist of a minimum of 33 units, at least 12 units of which must be in courses carrying upper division credit. Nine units may be applied toward general education requirements. The lower division courses must cover all of the following areas of science: astronomy, botany, chemistry, geology, physics, and zoology. Lower division minimum requirements: Biology 3 and 4, and Physical Science 1 and 2, or equivalent courses. Upper division requirements: Botany 119-S or Zoology 119-S, and Physical Science 150 or Physics 148, plus at least one more course in each of life and physical sciences for a minimum of 12 upper division units. These elective courses, Industrial Arts 85, Zoology 8A and 8B, Biology 160, 161, Industrial Arts 185, Zoology 165, and alternate courses in upper division above are available to students who take only the minimum lower division courses. Electives may be used to complete the required minimum of 33 units. A student electing this major must have one year each of high school algebra and geometry, or equivalent.

A *teaching major in mathematics* shall consist of a minimum of 24 units, at least 18 units of which must be in courses carrying upper division credit.

A *teaching major in social science* shall consist of a minimum of 24 units, at least 18 units of which must be in courses carrying upper division credit. There shall be a concentration of 12 units, at least six units of which must be in courses carrying upper division credit, selected from one of the following fields: anthropology, economics, geography, history, political science, or sociology. A year-course in American history must be included in the lower or upper division.

TEACHING MINORS

The *teaching minor in home economics* consists of 17 units to include Home Economics 3, 15, and 70 in the lower division, and Home Economics 150 in the upper division with six additional upper division electives chosen with the approval of the departmental adviser.

The *teaching minor in industrial arts* consists of 20 units to include Industrial Arts 11, 21, and 122, and one lower division and one upper division course in *each of two* of the following areas: general woodworking, general metalworking, electricity-radio, transportation, and graphic arts. These courses should be chosen in consultation with the adviser in industrial arts.

PROFESSIONAL COURSES IN EDUCATION

Professional courses include 24 units in the following: Education 184A-184B-184C, 100B (methods in the major and minor fields), 116A; plus Health Education 151.

SPECIAL SECONDARY SCHOOL CREDENTIAL WITH THE BACHELOR OF ARTS DEGREE

The special secondary credential is granted with the A.B. degree in teacher education in the following fields: art, business education, industrial arts, music, physical education, speech arts, correction of speech defects, and teaching the mentally retarded child. Majors in these fields are in addition to 45 units in general education courses. Professional courses in education are also required. Certain of these credentials require, in addition, a teaching minor in an academic field. For a statement of requirements in the major and in professional education, refer to the credentials below.

Summary of unit requirements:	*Units*
General education	45
Major for the credential	39–58
Professional courses in education	22–26
Minor, if required, and electives	0–18
Total number of units required for graduation	124

TEACHING MINORS FOR THE SPECIAL SECONDARY CREDENTIAL

A teaching minor is required for the special secondary credential in men's physical education. A minor is optional for the other special secondary credentials. Students planning to take a general secondary credential at a later date are advised to complete a teaching minor in one of the areas offered for the general secondary credential. Selection of the minor should be made in consultation with the coordinator of secondary education.

Men majoring in physical education should complete one of the minors described below. The minor consists of a minimum of 15 units, six units of which must be in courses carrying upper division credit. Some minors require a greater number of units. Teaching minors are offered in the following fields:

English
Foreign languages
General science
Health education
Industrial arts
Mathematics
Social science

The teaching minors include certain requirements:

English: Nine upper division units in English are required, including three units in American literature. Students who plan later to secure a general secondary credential with a minor in English must follow the program outlined under the general secondary credential.

Foreign languages: The minor must be in one foreign language field.

General science: Courses in the minor are to be selected from either of the following two general secondary credential minors: (1) life science and general science, (2) physical science and general science.

Health education: The minor must include Health Education 65, 90, 152, 145 or 153, 199, and Physical Education 161.

Industrial arts: The minor consists of 20 units to include Industrial Arts 11, 21, and 122, and one lower division and one upper division course in *each of two* of the following areas: general woodworking, general metalworking, electricity-radio, transportation, and graphic arts. Electives should be chosen in consultation with the chairman of the department.

Mathematics: This minor consists of a minimum of 15 units, at least six units of which must be in courses carrying upper division credit.

Social science: The minor must include courses selected from anthropology, economics, geography, history, political science, or sociology. Six units must be in a year-course sequence and six units are required in American history or three units in American history and three units in political science. Students are advised to follow the pattern of courses described for the teaching minor in social science for the general secondary credential.

SPECIAL SECONDARY CREDENTIAL IN ART

Courses in the major are in addition to 45 units of general education courses.

The teaching major in art for the special secondary credential consists of 44-46 units to include the following courses: Lower division: in general education: Aesthetics 5 or 51 and 50 (4 units); in the major: Art A (or high school equivalent), Art B, 6A-6B, 14A, 61A-61B, and six to eight units of art electives (20-22 units). Upper division: Aesthetics 150, Art 106A, 112A, 116A, 119A, 194A, 195A, Speech Arts 140A, and five units of art electives (22 units).

Professional courses in education consist of 22 upper division units to include the following courses: Education 184A-184B-184C, 116A, 119, and 100B-A. Health Education 151 (2 units) is also required.

A teaching minor is not required, but students planning to take a general secondary credential are advised to complete a teaching minor in one of the areas offered for the general secondary credential and the methods course (Ed. 100-B) in this teaching minor field.

SPECIAL SECONDARY CREDENTIAL IN BUSINESS EDUCATION

Courses in the major are in addition to 45 units of general education courses. The major in business education must include the following courses: Lower division: Economics 1A-1B and Business 20 or 120 (these courses may be counted as part of general education requirements); Business 1B, 8, 14A-14B, 18A, 25; and the requirements in *two* of the subfields listed below, of which *accounting* or *secretarial* must be one. Recommended: Geography 10.

Subfields:

Accounting: Select three units from Business 2, 21, or 24.
Business management: Business 18B.
Merchandising: Business 24.
Secretarial: Business 5B. (If satisfied, select three units from Business 2, 21, or 24.)

Upper division: Business 105A-105B, 108, 121, 190; and the requirement in *two* of the subfields listed below, of which *accounting* or *secretarial* must be one. The two fields selected in the lower division must be continued in the upper division.

Subfields:

Accounting: Select six units from Business 160A, 160B, 161A, or 164A.
Business management: Select six units from Economics 140, Business 103A, 125, 133, 154, or 184.
Merchandising: Business 123, plus three units from Business 182, 185, 186, 187, or Art 107.
Secretarial: Business 113A-113B.

Professional courses in education consist of 22 upper division units to include the following courses: Education 184A-184B-184C, 116A, 100B-T, and one of the following: Education 100B-B, 100B-ME, or 100B-S. Health Education 151 (2 units) is also required.

In addition to the requirements stated above, the student must present satisfactory evidence of one-half year, or 1,000 hours of approved experience in the field named in the credential.

A teaching minor is not required, but students planning to take a general secondary credential are advised to complete a teaching minor in one of the areas offered for the general secondary credential and the methods course (Ed. 100-B) in this teaching minor field.

SPECIAL SECONDARY CREDENTIAL IN INDUSTRIAL ARTS

Courses in the major are in addition to 45 units of general educational courses.

The major in industrial arts consists of 41 units to include the following: lower division: Industrial Arts 11, to be taken at the beginning of the major; five courses to be selected from Industrial Arts 21, 31, 51, 61, 71, and 81. (17 units total in lower division). Art 6A is a prerequisite for certain upper division courses (may be counted toward general education requirements in the area of literature, philosophy, and the arts). Upper division: a minimum of 24 upper division units to include nine units in *each of two* of the following areas: industrial drawing, general metalworking, general woodworking, electricity-radio, transportation, or graphic arts; and six units selected from the areas just mentioned, or from handicrafts courses, photography courses, or the general shop sequence.

Professional courses in education consist of 20 upper division units to include the following courses: Education 184A-184B-184C, 116A, and 100B-IA. Health Education 151 (2 units) is also required.

A teaching minor is not required, but students planning to take a general secondary credential are advised to complete a teaching minor in one of the areas offered for the general secondary credential and the methods course (Ed. 100-B) in this teaching minor field.

SPECIAL SECONDARY CREDENTIAL IN MUSIC

Students planning to work for the special secondary credential in music should consult with the chairman of the Music Department before registering and plan their course in view of individual variations in background and needs.

General basic requirements for the credential are as follows:

1. Demonstration of proficiency in vocal or instrumental *performance* comparable to a level of difficulty of the Bach two-part inventions or the easier Haydn sonatas for the piano before admission to the major may be granted.
2. Upon entering the department, each student is required to take an entrance test in piano proficiency for classification, and to commence work on no less than four consecutively taken semesters of class or private piano study for credit. Exceptions to this must be approved by the Chairman of the Music Department.

3. Upon entering the department, each student is required to declare his major instrument, take a proficiency test thereon for classification, and continue the development of his performance ability through class or individual study for credit after admission to the program, in accordance with department requirements.

4. Appearance as a soloist in at least one student recital during each semester in residence, after completion of two semesters of college work.

5. As laboratory experience, participation in two performing groups *each* semester, beginning with the first semester and continuing until the student has completed 14 units of credit in performing groups, one of which must be a major group (Chorus, Glee Club, Orchestra, or Band) in which his major instrument or voice is regularly used.

6. Before recommendation for admission to directed teaching will be granted, credential candidates must have completed all lower division courses in beginning class study of orchestral instruments and voice, Music 146A-146B, and must have passed the minimum state credential requirements in voice and piano, with or without credit, which are as follows:

(a) Piano: Ability (1) to play a Bach two-part invention; (2) to play an artistic accompaniment; (3) to play at sight four-part hymns.

(b) Voice: Ability (1) to sing at least one song representative of each of the following periods of vocal literature: classic, romantic, modern; (2) to sing at sight any part of a four-part hymn.

Students whose background in piano is inadequate for these requirements must register in their first semester for appropriate private or class instruction, with or without credit. Students with insufficient background in voice must register for voice instruction no later than the third semester.

Specific Requirements for the Major

Courses in the major are in addition to 45 units of general education courses, except that nine units of music performance group courses may be counted in general education toward degree requirements in the area of literature, philosophy, and the arts.

Lower division requirements: Music 9A-9B, 10A-10B-10C-10D (may be omitted in part or in full upon evidence of satisfactory piano technique), 15A-15B, 52A-52B, 59A-59B; two units selected from 20A-20B, 25A-25B, 30A-30B, and 35; and eight units of music performance group courses selected from courses numbered 70 to 87 (see general basic requirements above). Students will not be required to take a beginning course in their major instrument. They will, instead, be required to take an extra course in another beginning instrument.

Upper division requirements: Music 109A, 146A-146B-146C; five units selected from 120A-120B, 125A-125B, 130A-130B, and 135; four units selected from 111, 112, 116, 117, 121, 122, 126, 127, 131, 132, 150A-150B-150C-150D; six units of performance group courses selected from courses numbered 170 to 187; and four units of upper division electives selected from the areas of applied music, music history and literature, and composition and instrumentation. Total: 24 upper division units.

Professional Courses in Teacher Education

Professional courses in education consist of 24 upper division units to include the following courses: Education 184A-184B-184C, 116A, 117A, 145A, and 100B-Mu. Health Education 151 (2 units) is also required.

A teaching minor is not required, but students are urged to complete a minor and the methods course (Ed. 100B) in an academic field selected from the teaching minors for the general secondary credential.

SPECIAL SECONDARY CREDENTIAL IN PHYSICAL EDUCATION (MEN)

Courses in the major are in addition to 45 units of general education courses.

The major in physical education consists of 42 units to include the following: Lower division: Physical Education 53, 63, 64, 72, Health Education 65 (11 units); and Zoology 8A-8B (6 units). Upper division: Physical Education 141, 142, 145, 146, 161, 167, 168, 169, 170A or 170B, 190, and two units of physical education electives (25 units).

Professional courses in education consists of 20 upper division units to include the following courses: Education 184A-184B-184C, 116A, 100B-PE. Health Education 151 (2 units) is also required.

A teaching minor is required. Refer to the teaching minors for the special secondary credential listed above.

SPECIAL SECONDARY CREDENTIAL IN PHYSICAL EDUCATION (WOMEN)

Courses in the major are in addition to 45 units of general education courses.

The major in physical education consists of 44 units, including general education courses in physical education. Lower division: Physical Education 1A, 2A, 2B, 3A, 5A, 5B, 6, 12A, 13A, 14A, 18A, 53, and 72; and Zoology 8A-8B (16 units). Upper division: Physical Education 142, 151, 154A-154B, 155, 156A-156B, 160, 161, 167, 168, 170B, 190. (28 units). A minor is not required; however, a teaching minor selected from the general secondary teaching minors is strongly recommended.

Professional courses in education consist of 20 upper division units to include the following courses: Education 184A-184B-184C, 116A, and 100B-PE. Health Education 151 (2 units) is also required.

SPECIAL SECONDARY CREDENTIAL IN SPEECH ARTS

Courses in the major are in addition to 45 units of general education courses.

The major in speech arts consists of 45 units to include the following: Lower division: Speech Arts 4, 11A, 55A or 55B, 56A, 60A, 81A or 81B and three units in speech electives (21 units). Upper division: Speech Arts 150, 159, 176 or 179A; three units selected from 162, 191, or 192A; nine units selected from 108, 118, 140, 154A, 154B, 155, 182A-182B, or 183A-183B; and three units selected from upper division courses in English literature.

Professional courses in education consist of 20 upper division units to include the following courses: Education 184A-184B-184C, 116A, and 100B-SA. Health Education 151 (2 units) is also required.

A teaching minor is not required, but students planning to take a general secondary credential are advised to complete a teaching minor in one of the areas offered for the general secondary credential and the methods course (Ed. 100-B) in this teaching minor field.

SPECIAL SECONDARY CREDENTIAL IN CORRECTION OF SPEECH DEFECTS

This credential is granted only to students who can verify two years of successful teaching experience or four semester hours of superior student teaching completed in an approved teacher education institution and who hold a valid California teacher certificate, credential, or life diploma of elementary or secondary grade. (In other words, this credential accompanies a special secondary, general secondary, or general elementary credential.) Students must show credit in the following subjects, or their equivalents:

Lower Division	*Units*
Psychology 1 and Oral Communication	5
Upper Division	
Speech Arts 150, Phonetics	3
Speech Arts 176, Articulatory Problems	3
Speech Arts 179A-179B, Nervous Speech Disorders	6
Psychology 131, Psychology of Personality	3
Education 181, Exceptional Children	3
Education 102A, or 102D or 184C	2–4
Psychology 151, Introduction to Clinical Appraisal	3
Education 155, 230 or Psychology 152	3
Education 116B, Directed Internship	4
Two units may be earned in the children's clinic.	
Total	35–37

Suggested Pattern

(For the Special Secondary Credential in Correction of Speech Defects to accompany the regular Special Secondary Credential.)

Junior Year

1st Semester

Educ. 184A	4
Educ. 181	3
Sp. Arts 150	3
Sp. Arts 179	3

2d Semester

Educ. 184B	4
Sp. Arts 179B	3
Sp. Arts 176	3

Senior Year

1st Semester

Educ. 184C	4
Educ. 100B-SA	2
Psych. 131 (Prereq.: Educ. 181 and Psych. 1)	3
Educ. 116	3

2d Semester

Educ. 116A	3
Educ. 116B (Speech correction)	4
Educ. 100B (minor) (Optional)	2
Psych. 152	3
Psych. 151 (Prereq.: Educ. 181, 184C, and Psych. 131)	3

SPECIAL SECONDARY CREDENTIAL FOR TEACHING THE MENTALLY RETARDED CHILD

An applicant for the special secondary credential for teaching the mentally retarded child must have completed the following minimum requirements:

1. Possession of a valid kindergarten-primary, general elementary, junior high school, or general secondary credential.

2. Completion of 18 semester hours of professional work selected from the following fields:
   a. Required group: Education 102B, 102C or 184B; 181; 182 or 185; Art 61A or 161A; and three units of directed teaching of the mentally retarded.
   b. Additional work to complete the required total of 18 semester hours selected from any of the following electives: Education 176, 144, Psychology 131, 150, or 151.

3. The 18-unit requirement will be reduced 4 units for each year of verified, successful experience in teaching special classes for mentally retarded children, the total reduction not to exceed 12 units.

4. At least six semester units of the 18 required must have been completed within five years of the time application is made for the credential.

5. Twelve units of work must have been completed at this college.

HEALTH AND DEVELOPMENT CREDENTIAL

This credential is obtained by direct application to the State. Requirements for school nurses include:

1. Possession of a valid license issued by the official California state board or agency in charge of this profession in California.
2. Possession of the Public Health Nurse certificate.
3. The completion of six semester units of work including courses in:
   a. Educational Psychology (Education 130)
   b. Administration of the School Health Program (Health Education 153)
   c. Social case work, or rural education, or child hygiene (Health Education 151)

SCHOOL PSYCHOLOGIST CREDENTIAL

Each applicant for recommendation for the school psychologist credential shall have completed the following minimum requirements:

1. Possession of a valid general elementary or general secondary credential.
2. One year of successful teaching experience.
3. Possession of a master's degree in psychology or educational psychology.
4. Each applicant must complete the following course requirements:

	Units
A. Child development, mental hygiene, and counseling and guidance, including interviewing:	
Education 102B, Child Growth and Development, or Psychology 106, Developmental Psychology	3
Psychology 131, Psychology of Personality	3
Psychology 152, Introduction to Methods of Counseling or Education 233, Guidance Counseling Techniques	3
B. Psychology and education of exceptional children, social case practice including field work and clinical psychology:	
Education 181, Exceptional Children	3
Sociology 230, Principles of Social Case Work	3
Psychology 151, Introduction to Clinical Appraisal or Psychology 211, Advanced Clinical Psychology	3
C. Educational psychology and educational measurements including field work and elementary statistics:	
Psychology 130, Educational Psychology	2
Education 102A, Measurement and Evaluation in Elementary Education 102D, Measurement and Evaluation in Secondary Education, or Education 184C, The Teaching Process	2-4
Psychology 104A, Statistical Methods in Psychology	3
D. Individual and group mental tests including field work:	
Psychology 105A, Introduction to Psychological Testing	3
Psychology 105B, Individual Psychological Testing	3
Psychology 205, Advanced Mental Testing	3
E. Remedial instruction including laboratory or classroom practice:	
Education 144, Diagnosis and Remedial Treatment of Difficulties in Reading	3
Education 176, Problems of Speech Correction and Articulation or Education, 179A, Nervous Speech Disorders	3

These courses include laboratory practice.

NOTE: This credential will not be issued after September 15, 1956.

SCHOOL PSYCHOMETRIST CREDENTIAL

An applicant for the school psychometrist credential must have completed the following requirements:

1. Possession of a California general teaching credential (General Elementary, Junior High School, or General Secondary) or a four-year college course with a bachelor's degree.

2. Admission to teacher education by all undergraduate students or by graduate students who do not hold a California teaching credential. Courses in the Department of Education will not be open to students who are not admitted to teacher education. A special examining committee of members of both the Departments of Education and Psychology is established to interview applicants.

3. As a part of the undergraduate or graduate program the applicant must have completed 18 semester units of training distributed approximately as follows and approved by the credential adviser:

A. At least six units selected from the following areas with one course in each area: (1) Education 102A or 102D or 184C; (2) Education 102B or 102C; (3) Education 130. Education 184B will meet requirements in both area 2 and 3.

B. Six units as follows: Education 181 and Psychology 151.

C. Six units as follows: Psychology 105A and Psychology 105B.

Note: This credential will not be issued after September 15, 1956.

GENERAL PUPIL PERSONNEL SERVICES CREDENTIAL

This credential will become effective after September 15, 1956. It will supersede the school psychologist and school psychometrist credentials. It will be possible to earn the credential through San Diego State College with areas of concentration in school counseling, child welfare and attendance, psychometry, and school psychology. For the area of school social work, a second graduate year in a recognized school of social work will be required. Further details on this credential are available in the Secondary Education office of the college.

CURRICULA LEADING TO THE GENERAL SECONDARY SCHOOL CREDENTIAL

INFORMATION CONCERNING THE GENERAL SECONDARY SCHOOL CREDENTIAL

A candidate for this credential must complete the requirements for the bachelor's degree from an accredited institution with a major and a minor commonly taught in the secondary schools of California. Admission to candidacy for this credential should be sought during the second semester of the sophomore year or immediately upon admission to San Diego State College with advanced or graduate status. For admission requirements, refer to the section entitled: Admission to Teacher Education.

Students desiring a major for which San Diego State College is authorized should complete a program leading to the A.B. or B.S. degree at the end of four years and the General Secondary Credential upon completion of the graduate year requirements outlined on the following pages.

Students desiring a major in art, business education, industrial arts, music, physical education or speech arts may complete the requirements for the special secondary credential simultaneously with the bachelor's degree; then continue with the graduate program. For further details regarding these majors, refer to these credentials.

Any person desiring the General Secondary Credential should consult with the Coordinator of Secondary Education during his first semester of attendance at San Diego State College.

RECOMMENDED PROGRAM FOR THE GENERAL SECONDARY SCHOOL CREDENTIAL

1. The following courses should be completed before receiving the bachelor's degree: Health Education 151 (may be taken any semester); Education 184A and 184B (should be taken consecutively). Those persons changing from another vocational objective to education during the senior year may take Education 184A and 184B concurrently by special permission of the Coordinator of Secondary Education, following admission to Teacher Education and a check of the student's qualifications.

	Units
Health Education 151, Health Education for Teachers	2
Education 184A, The Secondary School	4
Education 184B, Development and Learning	4

2. After completion of requirements in (1) above, the following courses may be taken either before or after receiving the bachelor's degree; however, they should be taken concurrently with the first directed teaching assignment unless the student has equivalent teaching experience.

	Units
Education 184C, The Teaching Process	4
Education 116A or 316A, Directed Teaching (or equivalent)	3
Education 100B (methods in field of directed teaching assignment)	2-4

3. The graduate work must consist of San Diego State College's standard year of work, 24 to 30 semester units of upper division or graduate work, including the following specific requirements:

(a) At least 12-15 semester units completed at San Diego State College.

(b) At least six upper division or graduate semester units in fields outside of education. Graduate work in the major is recommended.

(c) Enough units to complete at least a 21 semester unit minor, with a minimum of six semester units of upper division credit in the minor subject area.

For a statement of requirements in the teaching major and minor fields, refer to these majors and minors below.

4. Professional Education during the graduate year: Completion of the courses listed in (1) and (2) above and the following:

	Units
Education 100B (in the field of the second directed teaching assignment) if not taken under (2) above	2
Education 230, Guidance Problems in Secondary Education	3
Education 250, Curricular Problems in Secondary Education	3
Education 316A, Directed Teaching, or equivalent teaching experience	3–6

MAJORS AND MINORS FOR THE GENERAL SECONDARY CREDENTIAL

The following pages outline tentative programs for the majors and minors for which San Diego State College is authorized to recommend for the General Secondary Credential. Every candidate for the general secondary credential must have a program approved in writing by the departmental representative in the major teaching field and in education as part of admission to the teacher education program.

Person with majors in broad fields (Language Arts, Life Science and General Science, Physical Science and General Science, Romance Languages, or Social Science) cannot take a minor within the area of their major.

Teaching Majors

- Art
- Business Education
- English
- French
- Health Education
- Industrial Arts
- Language Arts
- Life Science and General Science
- Mathematics
- Music
- Physical Education (Men)
- Physical Education (Women)
- Physical Science and General Science
- Psychology
- Romance Languages
- Social Science
- Spanish
- Speech Arts

Teaching Minors

- Art
- Business Education
- Economics
- English
- French
- Health Education
- History
- Home Economics
- Industrial Arts
- Life Science and General Science
- Mathematics
- Music
- Physical Education (Men)
- Physical Education (Women)
- Physical Science and General Science
- Social Science
- Spanish
- Speech Arts

Outline of Requirements

Major in Art

The requirements for the A.B. degree and the special secondary credential in art should be completed simultaneously. (Students transferring from another institution with the A.B. degree and a major in art should consult with the departmental representative for special program planning.) Refer to the special secondary credential in art. After the above requirements have been met, and the candidate has been accepted by the art staff for graduate work in art, the candidate for the general secondary credential shall complete a graduate year including the following courses in his major:

Graduate Year	*Units*
Art 200A-200B, Special Problems in Art	4

Minor in Art

A minimum of 21 semester units required.

Lower Division

Art A-B, Drawing and Composition	2–4
Art 6A-6B, Design	4
Art elective (Art 14A, Lettering, recommended)	3–5
Aesthetics 50, Appreciation and History of Art	2
Aesthetics 5, Art Orientation, or Art 51, Survey of Mexican Art	2

Upper Division

Aesthetics 150, Appreciation and History of Art	2
Art electives	4

Major in Business Education

The requirements for the A.B. degree and the special secondary credential in Business Education should be completed simultaneously. Refer to the special secondary credential in Business Education. After the above requirements have been met, the candidate for the general secondary credential shall complete a graduate year including the following courses in his major:

Graduate Year

Select four units from the following:	*Units*
Business 200, Readings in Current Literature in Business Education	2
Business 203, Office Management	2
Business 213, Problems in Business Education	2
Business 221, Basic Business Education	2
Business 223, Problems of Distributive Business	2
Business 233, Administration and Supervision of Business Education	2
Business 260, Advanced Problem Analysis (Accounting)	2

Minor in Business Education

A minimum of 21 semester units required.

Lower Division

Business 1A-1B, Typewriting	6
Business 14A-14B, Principles of Accounting	6

Upper Division

Nine upper division units should be selected in consultation with adviser in business education	9

Minor in Economics (Not available to Social Science majors)

A minimum of 21 semester units required.

Lower Division

Economics 1A-1B, Principles of Economics	6
A year course in another social science area	6

Upper Division

Economics 100A, Intermediate Economic Thought	3
Economics electives	6

Major in English

Lower Division

One year-course from lower division English electives	6
Lower division English electives	6

Upper Division

Upper division English courses selected under the supervision of the departmental representative	24

Graduate Year

English 200, Seminar	2
English 192, The English Language (if not taken as an undergraduate) or 191, 195, or an additional seminar	2–3

Minor in English (Not available to Language Arts majors)

A minimum of 21 semester units required.

	Units
Lower Division	
English 1, Freshman Composition	3
A year course chosen from: English 50A-50B, 52A-52B, 56A-56B, or 60A-60B	6
Upper Division	
Select one course from each if the following areas:	
Nineteenth Century English Literature: select from English 119A, 119B, 126A, 126B, or 143B	3
Shakespeare: select from English 117A or 117B	3
American Literature: select from English 131, 132, 133, or 134	3
Language: English 192	3

Major in French

Lower Division	
French 1, 2, 3, 4, 5, 6, or equivalents	16
Spanish 1, 2, or German 1, 2, or Latin 1, 2, or their equivalents	6
History 4A-4B (recommended)	
Six units from courses 1, 2, 3, 4 in Spanish, German, or Latin may be applied toward general education requirements.	
Upper Division	
French 101A-101B, Conversation and Composition	6
French 198, Comprehensive Reading and Survey	3
Upper division courses in French with a maximum of three units which may be selected from related fields with the approval of the departmental representative	15
Graduate Year	
French 214, Contemporary French Literature	2
French 220, Explication de Textes	2

Minor in French (Not available to Romance Language majors)

A minimum of 21 semester units required.

Lower Division	
French 1, 2, 3, 4, 5, 6, or equivalents	16
History 4A-4B (recommended)	
Upper Division	
French 101A-101B, Conversation and Composition	6

Major in Health Education

This teaching major may be used as a major for the A.B. degree if the student has been admitted to candidacy for the general secondary credential and has completed at least eight units in professional education courses, including Education 184A-184B, or equivalent, by the date of degree candidacy. The major is designed around the general major, with health education as the field of concentration.

Lower Division	Units
Health Education 65, Community Health	3
Health Education 90, Physiology of Reproduction	1
Home Economics 4A, General Nutrition	2
Zoology 8A, Human Anatomy	3
Zoology 8B, Human Physiology	3

Upper Division

36 upper division units to include the following:

	Units
Health Education 145, Safety Education and Accident Prevention	3
Health Education 151, Health Education for Teachers	2
Health Education 152, Health Education Programs	3
Health Education 153, Administration of the School Health Program	3
Health Education 190, Introduction to Public Health	3
Health Education 199, Special Study in Health Education	3–6
Physical Education 161, Instructor's Course in First Aid	2
Sociology 135, Marriage and the Family	3
Psychology 131, Psychology of Personality	3
Bacteriology 101, General Bacteriology	4
Six to nine upper division units selected from one of the teaching major or minor fields for the general secondary credential, selected with approval of the departmental adviser	6–9

Minor in Health Education

A minimum of 21 semester units required.

Students contemplating advanced degree work should plan to complete an academic minor as well as this minor.

Lower Division

Health Education 21, Principles of Healthful Living	2
Health Education 65, Community Health	3
Health Education 90, Physiology of Reproduction	1

Upper Division

Health Education 145, Safety Education and Accident Prevention	3
Health Education 151, Health Education for Teachers	2
Health Education 152, Health Education Programs	3
Health Education 153, Administration of the School Health Program	3
Health Education 190, Introduction to Public Health	3
Physical Education 161, Instructor's Course in First Aid	2

Minor in History (Not available to Social Science majors)

A minimum of 21 semester units required. A year course in United States History must be included.

Lower Division

History 4A-4B, Modern Europe, or 8A-8B, The Americas, or 17A-17B, American Civilization	6
Electives chosen from anthropology, economics, geography (except Geography 1 or 3), political science, sociology	6
Additional social science electives	0–3

Upper Division

History electives	6–9

Minor in Home Economics

A minimum of 21 semester units required.

Lower Division

Home Economics 3, Food and Nutrition	3
Home Economics 15, Clothing and Textiles	3
Home Economics 70, Children in the Home	2
Electives in Home Economics	1–4

Upper Division

Home Economics 150, Home Management	3
Home Economics 170, Child Development Laboratory	2
Electives in Home Economics	7–9

Electives for enrichment—see department chairman.

Major in Industrial Arts

The requirements for the A.B. degree and the special secondary credential in industrial arts should be completed simultaneously. Refer to the special secondary credential in industrial arts. After the above requirements have been met, the candidate for the general secondary credential shall complete a graduate year including the following:

Graduate Year	*Units*
Industrial Arts 200, Seminar	3
Additional postgraduate industrial arts work selected with approval of the department chairman	1–3

Minor in Industrial Arts

A minimum of 21 semester units required.

Lower Division		
Industrial Arts 11, Orientation		2
Industrial Arts 21, Industrial Drawing		3
Select at least three courses from the following:		9
Industrial Arts 31, General Metalworking	3	
Industrial Arts 51, General Woodworking	3	
Industrial Arts 61, Electricity-Radio	3	
Industrial Arts 71, Transportation	3	
Industrial Arts 81, Graphic Arts	3	
Upper Division		
Industrial Arts 122, Industrial Drawing for Teachers		3
Select appropriate upper division electives		4-6

Major in Language Arts

This major requires 46 units to be taken in the fields of composition, dramatics, journalism, language, literature, radio or motion pictures, and speech arts. Education courses to be taken with this major include the standard program for all general secondary credentials plus Education 154, Reading in the Secondary School, and Education 100B in both English and speech arts. A methods course in a teaching minor is also required for the credential. Students using this major for the A.B. degree must complete a minimum of eight units in education courses by date of degree candidacy.

Lower Division	*Units*
English 50A-50B, or 52A-52B, or 60A-60B	6
(or two upper division courses may be substituted, selection to be made from English 116A-116B, or 118A-118B, or 119A-119B, or 120A-120B, or 126A-126B, or 143A-143B)	
Journalism 51A	3
Speech Arts 60A, or 60B, or 55A, or 55B	3
Speech Arts 81A, or 81B	3
Upper Division	
English 192	3
English 106 or 191	3
English 131, or 132, or 133, or 134	3
English 117A, or 117B, or 152A, or 152B	3
Journalism 152	3
Speech Arts 108, 159, and 176	9
Speech Arts 191, or 192A, or 192B	3
If lower division English sequence is taken in American Literature, the upper division course work in literature should be taken in other areas.	
Graduate Year	
One 200 numbered course in speech arts	2
One 200 numbered course in English	2

Major in Life Science and General Science	*Units*
Lower Division	
Zoology 1, General	5
Botany 1, General	5
Zoology 8A-8B, Human Anatomy and Physiology	6
Biology 15, Quantitative Biology	3
Chemistry 2A-2B, Fundamentals	6
Physics 2A-2B, General (or, with the approval of the departmental adviser, high school physics and Geology 2 and Physical Science 1)	6
12 units in natural science courses may be applied toward general education requirements.	
Upper Division	
Bacteriology 101, General	4
Biology 110, Ecology	4
Biology 155, Genetics	3
Biology 161, History of Biology	3
12 units chosen from the following:	
Zoology 112, 114, 115, 117, 121, Botany 114, Zoology 101 or Botany 107	12
Graduate Year	
Four units of course work at the graduate level are required. This requirement may be met by two semesters of Biology 200 or by one semester of Biology 200 and 2 units of Zoology 298 or Botany 298	4

Minor in Life Science and General Science

A minimum of 21 semester units required.

Lower Division	
Biology 3, Principles and Biology 4, Natural History	6
Physical Science 1 and 2, Introduction	6
Upper Division	
Biology 160, Evolution	2
Biology 161, History of Biology	3
Zoology 119S or Botany 119S, Field	4

Major in Mathematics

Mathematics 3A, Analytic Geometry	3
Mathematics 3B, First Course in Calculus	3
Mathematics 4A, Second Course in Calculus	3
Additional mathematics or work in related areas	3

Suggested courses in related areas: Astronomy 1, Descriptive Astronomy; Business 2, Mathematics of Finance; Engineering 1A, Plane Surveying; Engineering 21, Descriptive Geometry; Physics 4A, Mechanics of Solids and Fluids; Physics 2A, General.

Upper Division	
At least one course in Algebra	3
At least one course in Geometry	3
Mathematics 140A, Mathematical Statistics	3
Mathematics 117, Intermediate Calculus (unless 4B, Third Course in Calculus taken in lower division)	3
Mathematics 104, History of Mathematics	3
Additional upper division units in mathematics or related areas	9
Graduate Year	
Mathematics 200, Seminar	4

Minor in Mathematics

A minimum of 21 semester units required.

Lower Division	
Mathematics D, Trigonometry (or high school equivalent for which pattern credit may be allowed)	3
Mathematics 3A, Analytic Geometry	3
Mathematics 3B, First Course in Calculus	3
One course selected from courses in related areas	3
(See above under teaching major in mathematics)	

Upper Division

Mathematics 104, History of Mathematics	3
Mathematic electives	6

Major in Music

The requirements for the A.B. degree and the special secondary credential in music should be completed simultaneously. Students transferring from another institution with the A.B. degree and a major in music should consult with the departmental representative for special program planning. Refer to the special secondary credential in music. After the above requirements have been met, the candidate for the general secondary credential shall complete a graduate year including 4 units selected from the following courses in his major:

Graduate Year

Four units selected from the following:	*Units*
Music 200A-200B, Special Problems in Music	2–2
Music 203A-203B, Musicology	2–2
Music 206A-206B, Composition	2–2

Minor in Music

A minimum of 21 semester units required. The student is required to demonstrate vocal or instrumental proficiency before admission to the minor program may be granted. As laboratory experience, the student with music as a minor is required to participate in one music activity each semester for seven semesters. (In special cases this requirement may be waived by the chairman of the Music Department.)

Lower Division

Music 9A, Elementary Harmony	3
Music 52A, History of Music	3
Music 10A-10B, Piano (may be omitted in part or in full upon demonstration of proficiency)	2
Music activities chosen from courses numbered 70 to 87	4
Selected from the following: Music 15A, 20A, 25A, 30A	3–5

Upper Division

Music 146A, Fundamentals of Conducting	1
Music 146B, Instrumental Conducting, or 146C, Choral Conducting	1
Music activities chosen from courses numbered 170 to 187	3
Selected from the following: Music 111, 112, 116, 117, 121, 122, 126, 127, 131, 132, or 150	1

Major in Physical Education for Men

The requirements for the A.B. degree and the special secondary credential in physical education should be completed simultaneously. After the major field requirements for the special secondary credential in physical education have been met, the candidate for the general secondary credential shall complete a graduate year, including four units from the following courses in his major:

Graduate Year

Four units selected from the graduate courses in physical education	4

Minor in Physical Education for Men

A minimum of 21 semester units required.

A student contemplating advanced degree work should plan to complete an academic minor as well as this minor.

Lower Division

Physical Education 53, Physical Education in the Elementary Schools	2
Physical Education 72, Introduction	2
Electives	2–4

Upper Division	*Units*
Professional activity courses (should be selected in consultation with departmental representative)	4
Physical Education 161, Instructor's Course in First Aid	2
Physical Education 190, Administration of Physical Education in Secondary Schools	3
Physical Education 170A or 170B, Recreational Leadership	2
Electives	2–4

Major in Physical Education for Women

The requirements for the A.B. degree and the special secondary credential in physical education should be completed simultaneously. After the major field requirements for the special secondary credential in physical education have been met, the candidate for the general secondary credential shall complete a graduate year including four units from the following courses in the major:

Graduate Year	
Four units selected from the graduate courses in physical education	4

Minor in Physical Education for Women

A minimum of 21 semester units required.

A student contemplating advanced degree work should plan to complete an academic minor as well as this minor.

Lower Division	
Physical Education 1A, Fundamental Skills	½
Physical Education 2A-2B, Folk Dancing	1
Physical Education 3A, Modern Dance	½
Physical Education 5A-5B, 6, Team Sports	1½
Physical Education 53, Physical Education in the Elementary School	2½
Physical Education electives	3–4

Upper Division	
Physical Education 156A-156B, Sports Methods	4
Physical Education 151, Folk Dancing Materials and Advanced Techniques	2
Electives selected from Physical Education 190, 170B, 154A-154B	5–6

Major in Physical Science and General Science

To obtain a teaching major in physical science and general science for the general secondary credential a student obtaining the A.B. or B.S. degree in chemistry or physics, or the A.B. degree in physical science, must include in his program the following courses, which will also satisfy the natural science requirements for general education.

Lower Division	*Units*
Astronomy 1, Descriptive	3
Biology 3 and 4, General, and Natural History of Plants and Animals	6
Geology 2 or 1A, General or Physical	3–4

Recommended electives: Astronomy 9, Geography 3, Geology 3; general education courses in literature, philosophy, and the arts: Industrial Arts 5, 6, or 85.

Upper Division

Same as for the A.B. or B.S. major in chemistry, physics, or physical science.

Recommended electives, if not included as part of the major: Botany 119, Chemistry 101A, Physics 107, 158, Zoology 119, and Geography 145 (a general education course in social science).

Graduate Year

Select four units from the following:

Chemistry 200, Seminar	2–4
Physics 200, Seminar	2–4

Minor in Physical Science and General Science

This minor may be used for the A.B. degree only if the student has been admitted to the teacher education program and has completed eight units in professional education courses by the date of degree candidacy.

This minor consists of 26 units in courses specified below.	*Units*
Astronomy 1, Descriptive Astronomy	3
Biology 3 and 4, General, and Natural History of Plants and Animals	6
Chemistry 2A-2B, or 1A-1B, Fundamentals, or General	6–10
Geology 2 or 1A, General, or Physical	3–4
Physics 2A-2B and 3A-3B, or 4A-4B-4C, General, or Principles	8–12

The following courses are recommended as electives: Astronomy 9, Geology 3, Chemistry 101A, Geography 3, Geography 145, Physical Science 150, Physics 148, Botany 119S or Zoology 119S, Industrial Arts 5, 6, and 85.

Major in Psychology

This major can be used for a general secondary credential only if the candidate completes *two* teaching minors.

Lower Division

Psychology 5 and 6, Principles	6

Upper Division

Psychology 104A, Statistical Methods	3
Psychology 105B, Individual Psychological Testing	3
Psychology 131, Psychology of Personality	3
Psychology 151, Introduction to Clinical Appraisal	3
Psychology 160A, Experimental Psychology	3
Electives to be selected with approval of the departmental representative	9

Graduate Year

Psychology 201, Seminar in Psychology	2
Education 230, Guidance Problems in Secondary Education	3

Major in Romance Languages

Lower Division

Spanish 1, 2, 3, 4, 5, 6, or the equivalents	16
French 1, 2, 3, 4, 5, 6, or the equivalents	16
History 4A-4B, or 8A-8B (recommended)	

Six units from courses 1, 2, 3, 4 in French or Spanish may be applied toward general education requirements.

Upper Division

Spanish 101A-101B, Conversation and Composition	6
French 101A-101B, Conversation and Composition	6
Spanish 198 or French 198, Comprehensive Reading and Survey Course	3
Courses in Spanish literature, French literature or Spanish-American literature, selected with the approval of the departmental representative	9

NOTE: At least nine units of upper division courses must be taken in each language.

Graduate Year

Any two of the following courses:

French 214, Contemporary French Literature	2
French 220, Explication de Textes	2
Spanish 201, Old Spanish	2
Spanish 204, Seminar in Spanish-American Literature	2

Major in Social Science

This teaching major may be used as a major for the A.B. degree if the lower and upper division requirements listed below are completed and the student has been admitted to candidacy for the general secondary credential and has completed at least eight units of professional courses in education by the date of degree candidacy. Twelve units of social science courses in the major may be applied toward general education requirements in social science.

The major must include six units in United States history and work from at least four of the social science fields listed below.

Lower Division

A student must complete a minimum of six units in each of at least three fields he may select from the departments named below:

Economics
Geography
History
Political Science
Sociology and/or Anthropology

Upper Division

A student must complete a minimum of 30 units with the approval of the departmental representative as follows:

	Units
1. A minimum of 12 units from any field named above	12
2. A minimum of six units from each of two fields named above, excluding the field selected for the major upper division concentration	12
3. Electives from social science fields	6

Graduate Year

Post-bachelor work selected with approval of the departmental representative	4

Minor in Social Science

(Not available to a student with a major in a specific social science.)

This minor may be used for the A.B. degree only if the student has been admitted to the teacher education program and has completed eight units in professional education courses by the date of degree candidacy.

This minor consists of 27 units in courses specified below.

Lower Division

A student must complete a six unit sequence from each of three of the following fields:

Anthropology 1A-1B
Economics 1A-1B
Geography 1 and 2 or 12A-12B
History 4A-4B or 8A-8B
Political Science 1A-1B or 71A-71B
Sociology 50 and 51

Upper Division

One upper division sequence in United States history	6
Elective from social science fields named above	3

Major in Spanish

Lower Division

Spanish 1, 2, 3, 4, 5, 6, or the equivalents	16
French 1, 2, or German 1, 2, or Latin 1, 2, or their equivalents	6

History 4A-4B, or 8A-8B (recommended)

Six units from courses 1, 2, 3, 4 in French, German, or Latin may be applied toward general education requirements.

Upper Division

Spanish 101A-101B, Conversation and Composition	6
Spanish 198, Comprehensive Reading and Survey	3
Upper division courses in Spanish with a maximum of three units which may be selected from related fields with the approval of the departmental representative	15

Graduate Year

Spanish 201, Old Spanish	2
Spanish 204, Seminar in Spanish-American Literature	2

Minor in Spanish (Not available to Romance Languages majors)

A minimum of 21 semester units required.

Lower Division	*Units*
Spanish 1, 2, 3, 4, 5, 6, or equivalents	16
History 4A-4B, or 8A-8B (recommended)	
Upper Division	
Spanish 101A-101B, Conversation and Composition	6

Major in Speech Arts

The requirements for the A.B. degree and the special secondary credential in Speech Arts should be completed simultaneously. Refer to the special secondary credential in Speech Arts. After the above requirements have been met, the candidate for the general secondary credential shall complete a graduate year including the following course in his major:

Graduate Year	
Speech Arts 200, Seminar	4

Minor in Speech Arts

A minimum of 21 semester units required.

Lower Division	
Speech Arts 3, Speech for Communication	2
Speech Arts 4, Extemporaneous Speaking	3
Speech Arts 11A, Interpretation	3
Speech Arts 55A or 55B, Acting	3
Speech Arts 81A or 81B, Survey of Radio and Television Techniques	3
Electives in speech from 61 to 63	0-1
Upper Division	
Speech electives (should be selected in consultation with departmental representative	6-7

CURRICULA LEADING TO CREDENTIALS IN ADMINISTRATION AND SUPERVISION

Courses and field experience are available which lead to credentials in Elementary and Secondary Administration, Elementary and Secondary Supervision and Special Subject Supervision. A selection and admission program is employed to select candidates for these credentials who have the promising background experiences and competencies necessary to enable them to serve in positions of supervision and administration.

GENERAL REQUIREMENTS FOR ADMINISTRATION AND SUPERVISION CREDENTIALS

In addition to the general requirements of the State of California for all credentials the following requirements are common for admission to and completion of all supervision and administration credentials:

1. Maintain a grade point average of 1.75 on all work applied toward the credential, exclusive of courses required for the basic credential.
2. Admission to the program of Administrative Studies, which includes:
    a. Completion of information on a personal data sheet and the filing of official transcripts of all college work. (Forms and information available in Division of Education Offices.)
    b. Completion of a minimum of two counseling interviews, one with the Chairman of Administrative Studies and one with a resident staff member teaching courses on the level, elementary or secondary, at which the candidate is working. The sequence of courses for the credential will be planned with the candidate at this time.
4. Admission to the program should be completed at any time previous to enrolling in Education 262, 263, 264, or 265.
5. Candidate must present a letter of acceptance from his administrator before enrolling in any course requiring field projects: Education 262, 263, 264, or 265.
6. Candidate may not enroll for more than three semester units of 200 numbered courses applied toward the credential during any single semester when he has a full-time teaching position.

7. Candidate must have completed a minimum of one full year of successful teaching experience before he may be admitted to courses in the core subjects, Education 262, 263, 264, or 265.
8. Candidate must have completed a minimum of two full years of successful teaching experience before he may be admitted to Education 266 or 267 (Field Experience) or to Education 316B (Internship in School Administration or Supervision).

CURRICULA LEADING TO CREDENTIALS IN ELEMENTARY SCHOOL ADMINISTRATION AND SUPERVISION

In addition to the requirements listed above, the candidate shall:

1. Possess a valid General Elementary Credential.
2. Present written evidence of two years of successful teaching experience on the elementary level.
3. Complete 30 semester units for the Administration Credential (24 units for the Supervision Credential) of upper division or graduate work in addition to the holding of the General Elementary Credential. These units shall include specific courses designated by the California State Department of Education and San Diego State College.
4. Complete a minimum of 15 units of post-graduate work in residence at San Diego State College.
5. Make formal application for an evaluation for the credential at San Diego State College and at the completion of all requirements, make application for the credential.

Course Requirements for the Elementary Administration and Elementary Supervision Credentials as Designated by the State Board of Education

A. Courses in undergraduate or graduate training (letters and numbers correspond with State Department Bulletin Credential Regulations):

*1. The scope, functions, and place of the system of public education of elementary and secondary schools; rural and urban schools; vocational education; education for adults; special school programs; auxiliary agencies: Education 115A	2 units
2. Principals and practices of curriculum construction and evaluation: Education 240 or 245	3 units
3. Measurement and appraisal of educational achievements and aptitudes: Education 102A	3 units
4. Pupil personnel, counseling and guidance, including techniques and practices of child study and parent education: Education 155 or 230	3 units

B. Concurrently with or subsequently to teaching experience, graduate or undergraduate training shall include work in the following subject groups, including directed field work of such a nature as to give the applicant first-hand knowledge of problems and issues as they exist in the public schools:

*1. Federal, state, county and city school organization, administration, and supervision: Education 260	3 units
*2. School finance, business administration, and law: Education 270	3 units
3. The organization and administration of elementary schools: Education 262	3 units
4. Elementary school supervision: Education 264	3 units
5. Field work or internship in school administration or supervision: Education 266 or 316B	3–6 units

C. Elective courses in general or professional education to complete 30 units (24 for supervision) *after receiving the General Elementary Credential or the A.B. degree.*

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* Courses not required for the Supervision Credential.

CURRICULA LEADING TO CREDENTIALS IN SECONDARY SCHOOL ADMINISTRATION AND SUPERVISION

In addition to the common requirements listed above, the candidate shall:

1. Possess a valid General Secondary Credential.
2. Present written evidence of two years of successful teaching experience on the secondary level.
3. Complete 18 semester units for the Administration Credential (15 units for the Supervision Credential) of upper division or graduate work in addition to requirements for the General Secondary Credential. These units shall include specific courses designated by the California State Board of Education and San Diego State College.
4. Complete a minimum of 12 units of postgraduate work in residence at San Diego State College.
5. Make formal application for an evaluation for the credential at San Diego State College and at the completion of all requirements make application for the credential.

Course Requirements for the Secondary Administration and Secondary Supervision Credentials as Designated by the State Board of Education

A. Courses in undergraduate or graduate training (letters and numbers correspond with State Department Bulletin Credential Regulations):

	Units
*1. The scope, functions, and place in the system of public education of elementary and secondary schools; vocational education; education for adults; special school programs; auxiliary agencies: Education 115A and 115B or 184A	4–5 units
2. Principles and practices of curriculum construction and evaluation: Education 250	3 units
3. Measurement and appraisal of educational achievement and aptitudes: Education 102D or 184C	3–4 units
4. Pupil personnel, counseling and guidance, including techniques and practices of child study and parent education: Education 230	3 units

B. Concurrently with or subsequently to teaching experience, graduate or undergraduate training shall include work in the following subject groups, including directed field work of such a nature as to give the applicant first-hand knowledge of problems and issues as they exist in the public schools:

	Units
*1. Federal, state, county and city school organization, administration, and supervision: Education 260	3 units
*2. Finance, law, business administration: Education 270	3 units
3. The organization and administration of secondary schools: Education 263	3 units
4. Supervision of instruction and curriculum in the secondary schools: Education 265	3 units
5. Directed field work or internship in administration or supervision: Education 267 or 316B	2–6 units

C. Elective courses in general or professional education to complete 18 units (15 for supervision) *after receiving the General Secondary Credential.*

SPECIAL SUBJECT SUPERVISION CREDENTIAL

This credential is available for persons who wish to supervise in a special subject area. Those desiring this credential should see the Chairman of the Division of Education.

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* Courses not required for the Secondary Supervision Credential.

THE BACHELOR OF EDUCATION DEGREE AND THE GENERAL ELEMENTARY CREDENTIAL

ELIGIBILITY FOR CANDIDACY

Teachers in California public schools with a minimum of 60 semester units of standard college work are eligible for candidacy for the Bachelor of Education degree. The purpose of this degree is to increase the professional competence of teachers in California public schools who do not hold a bachelor's degree. The educational program of each applicant shall be determined on the basis for his previous preparation and of the services he is to render. In the period of professional preparation the applicant shall be guided into those learning experiences designed to meet his cultural and professional needs.

MINIMUM REQUIREMENTS

An applicant for the general elementary credential and the Bachelor of Education degree shall comply with the procedures for application and with the requirements for personal qualifications and general training and shall have completed a program including the following minimum requirements:

a. A four-year college course of 124 semester units, or the equivalent.

b. Eighteen semester units, or the equivalent, of professional work in education, constituting an organized program designed to prepare candidates in the following areas:
   (1) The evolution of educational thought and practice as to the function of the school in a democratic society, with emphasis on the elementary school.
   (2) The nature of individual growth and development; the psychological aspects of learning; child study, with emphasis on directed observation of children; mental hygiene and personality development; parent education; guidance practices.
   (3) The selection and arrangement of learning experiences, instructional materials, learning methods and appraisal techniques related to all statutory requirements for teaching, including reading, writing, spelling, language study, arithmetic, geography, history of the United States and of California, civics including the Constitution of the United States, music, art, physical education, healthful living, morals and manners, safety education, and fire prevention.
   (4) The use of audio-visual aids in instruction.

c. Directed teaching in the elementary school, eight semester units, or the equivalent, under the supervision of superior teachers in actual classroom situations of the elementary school level.

d. Sixty-one semester units or the equivalent in basic subject fields, distributed approximately as follows:
   (1) *Social Studies.* Twelve semester units, or the equivalent, with emphasis upon current economic, political, and social problems and world history and geography, sociology and anthropology. The legal requirement in United States Constitution, American history, institutions, and ideals, and principles of California state and local government shall be included in the social studies program.
   (2) *Science.* Twelve semester units, or the equivalent, in the fields of physical and biological science, with emphasis upon the study and use of the environment.

(3) *English,* including speech. Twelve semester units, or the equivalent, including oral and written expression, world literature, children's literature, dramatics, detection and correction of speech defects, and the use of books and libraries.

(4) *Mathematics.* Three semester units, or the equivalent, including subject matter and techniques essential in the teaching of mathematics in the elementary school.

(5) *Health and Hygiene.* Three semester units, or the equivalent, including personal hygiene, subject matter and techniques essential in health education to elementary school pupils.

(6) *Physical Education.* Three semester units, or the equivalent, including subject matter and techniques essential in the teaching of physical education to elementary school pupils.

(7) *Music.* Eight semester units, or the equivalent, including content and techniques appropriate for the elementary school.

(8) *Art.* Eight semester units, or the equivalent, in graphic art and industrial arts applicable to learning experiences appropriate for elementary school children.

e. The remaining units necessary to complete the requirements for the bachelor of education degree shall be distributed among those offerings of the institution that best serve the cultural and professional needs of the candidate, except that a course or the equivalent in fire prevention must be included.

EVALUATION OF TEACHING EXPERIENCE AND SUBJECT MATTER FIELDS

a. A candidate with two or more years' teaching experience may be awarded a maximum of eight semester units of credit, or the equivalent, in directed teaching provided he demonstrates satisfactory skill to a representative of the institution under whose direction he is completing his degree program, or provided other conditions set by the institution to insure classroom skill are met. This credit shall not be applied until the candidate has completed at least 116 semester units, or the equivalent, of his program.

b. Credit toward the bachelor of education degree may be secured by passing a satisfactory examination in subjects included in the fields of study mentioned above.

c. A maximum of 30 units may be secured by examination.

INSTITUTION AND RESIDENCE REQUIREMENTS

a. A minimum of 30 semester units, or the equivalent, exclusive of any credit allowed for teaching experience, must be secured from the college conferring the degree.

b. At least 12 semester units, or the equivalent, must be earned in campus residence course work at the college conferring the degree and must be secured after completion of at least 90 semester units, or the equivalent.

BACHELOR OF VOCATIONAL EDUCATION DEGREE

The purpose of this degree is to promote the professional advancement of the vocational teachers of the State. Eligible candidates for this degree shall be limited to those vocational teachers who meet the requirement established in the Education Code of the State of California and who are recommended by the Board of Examiners for Vocational Teachers.

The educational program for each applicant shall be determined by the College in terms of the needs of the individual applicant and the standards of the institution.

Each applicant for the degree shall have completed, with a grade point average of 1.0 (grade of C) or better, a course of 124 semester units, including the credits recommended by the Board of Examiners, and shall have met the general education requirements prescribed for the bachelor of arts or bachelor of science degree.

The credits recommended by the Board of Examiners for Vocational Teachers for the applicant's occupational, managerial and supervisory experience shall be applied toward a major in vocational arts. The vocational teacher training completed by the applicant may be used toward a minor in education or toward electives if some other minor is used.

The candidate for this degree must complete a minimum of 24 semester units in residence at this College, including registration in 36 weeks of residence work. The candidate must also meet all institutional requirements prescribed for candidates for other bachelor degrees, including requirements in American history, institutions, and ideals, U. S. Constitution, and California state and local government.

ANNOUNCEMENT OF COURSES

COURSE NUMBERS

Courses numbered from 1 to 99 are lower division (freshman or sophomore) courses; those numbered 100 to 199 are upper division (junior or senior) courses; those numbered 200 to 299 are graduate courses (see section on Admission and Registration for information concerning eligibility to enroll in these courses); those numbered 300 to 399 are professional education courses to be taken at the graduate level.

CREDIT FOR UPPER DIVISION AND GRADUATE COURSES

A student with lower division standing is not eligible to take upper division courses, with the following exceptions: A student in the last semester of his sophomore year who is approaching upper division standing and is carrying sufficient lower division units to complete the required minimum of 60 units may carry upper division units for the remainder of his study load. A student with sophomore standing may carry upper division courses for upper division credit provided that he has the written approval of the chairman of the department and the Dean of Instruction. This written approval must be filed in the Office of the Registrar on the form "Adjustment of Academic Record." Blank forms may be obtained by the student at the Evaluations Office.

Graduate credit for courses numbered 200 to 299 is limited to students with graduate status. (See Admission to Graduate Study in section on Admission and Registration.)

GENERAL EDUCATION COURSES

Course numbers preceded by an asterisk (*) are general education courses which may be applied toward the 45 unit requirement in general education, unless specifically required as part of the major. Refer to the section of the catalog entitled: General Requirements for the Bachelor of Arts and Bachelor of Science Degrees.

UNITS

Figures in parentheses indicate the unit value of the course.

One "unit" represents 50 minutes of recitation or lecture, together with the required preparation, or three hours laboratory work each week for a semester of 18 weeks.

SEMESTER IN WHICH COURSES ARE OFFERED

Roman numeral I indicates course is offered in Fall semester. Roman numeral II indicates course is offered in Spring semester.

Following the course title are designations of credit and the semester in which course is offered. Examples:

(3) I	Three units. Offered first semester
(3) I, II	Three units. Offered first semester and second semester
(3-3) Year, I	Three units each semester. Year sequence beginning in the first semester
(3-3) Year, I, II	Three units each semester. Year sequence beginning either semester

Although the college fully expects to carry out the arrangements planned in the list of courses, it reserves the right to make changes. Classes in which the enrollment does not come up to the minimum number set by the State Department of Education may not be offered or may be postponed.

PREREQUISITES

Prerequisites for courses are stated. A student should not enroll in a course for which he is not eligible.

Admission to all graduate courses requires graduate status and permission of the instructor.

AESTHETICS

IN THE DIVISION OF FINE ARTS

Major or minor work is not offered in aesthetics; however, certain courses in this field are required as part of the majors in art and in music. For specific information, refer to these departments.

Lower Division Courses

***2. Introduction to Music (3) I**

Practical approach to hearing music with understanding and pleasure, through study of representative compositions of various styles and performance media, great musicians and their art. Music correlated with other arts through lectures, recordings, concerts. Closed to music majors or minors.

***5. Art Orientation (2) II**

An illustrated lecture course dealing with aesthetic meaning and its relation to the structure of art products. Designed to increase both understanding and appreciation of the visual world in general and of the fine arts in particular.

***50. Appreciation and History of Art (2) I**

A survey of art development in painting, sculpture, architecture, and handicrafts from the dawn of art to the Renaissance. Illustrated.

***51. Survey of Mexican Art (2) I**

A study of Mexican and Middle American Art from earliest time to present.

***52A-52B. Survey of Oriental Art (3-3) Year, I**

A study of the art of the great cultures of the Orient. (52A is a prerequisite for 52B.)

Upper Division Courses

***102. Great Music (3) II**

Instrumental and vocal music in the larger forms studied through directed listening. Artistic trends and their effect upon music composition and performance. No prerequisite, but completion of Aesthetics 2 recommended. Not open for credit to music majors. Formerly Aesthetics 100.

***138. Introduction to Aesthetic Appreciation (1) I** (Same course as Comparative Literature 138)

Major forms of expression and aesthetic experience in art, music and literature, presented by an interdepartmental staff through lectures, demonstrations, and panel discussions. Not open to students with credit for Comparative Literature 138.

***150. Appreciation and History of Art (2) II**

The period from the Renaissance through the modern school treated in the same manner as in Aesthetics 50.

160. Techniques and Procedures of the Art Museum Worker (3) I
(Not offered in 1955-56)

Designed to acquaint the student with the nature and function of the art museum in the community and to give him experience in the methods by which it serves the public. Prerequisite: Aesthetics 5 or 50 and 150.

AIR SCIENCE

IN THE DIVISION OF AIR SCIENCE

Air Force Reserve Officers' Training Corps

The Department and Division of Air Science at San Diego State College offers the curriculum prescribed by the Air Force Reserve Officers' Training Corps. This curriculum consists of a four-year course, including a two-year basic course and a two-year advanced course.

The objectives of the Air Force ROTC program are the development of qualities of leadership and character essential to civil and military responsibility and the training of officer reserve personnel. Completion of the four-year course and a bachelor's degree may lead to a commission in the Air Force Reserve. Students who have demonstrated outstanding qualities of scholarship and leadership may receive special consideration for regular commissions in the Air Force.

Flight training is not offered as part of this program; however, Air Force ROTC graduates have a high priority for such training and, if accepted, serve as reserve officers on active duty during the training period.

Eligibility: A regularly enrolled male student is eligible for admission to the basic course if he is a citizen of the United States, not less than 14 years of age and has not reached his 23d birthday, and is physically qualified for military training. For admission to the advanced course, the student must not have reached his 25th birthday and must have completed the basic course or its equivalent. Students must register for the AFROTC as first semester freshmen to qualify for the full program. Entrance into the advanced course is contingent upon successful completion of the basic course or its equivalent. Federal law prohibits doubling up of any phase of the basic course (four separate semesters are required). If the ROTC was available to the freshman, he cannot get consideration for starting in the program at a later date in his college career. Outstanding transfer students who were enrolled at schools where ROTC was not offered may be allowed to compress the course into three academic years. At the discretion of the Professor of Air Science, up to two years of pattern credit in the basic course may be allowed for prior active service in the armed forces. Normally, a student entering the advanced course must have two years of college work remaining. The applicant must pass required screening tests and be selected by the Professor of Air Science and the President of the College.

Attendance at one summer camp is required of each student to qualify for the commission. The summer camp is six weeks in length and is held at an active Air Force base. The student receives $78 per month during this training period. Uniforms, equipment, subsistence, and transportation are furnished by the Air Force.

Students in the basic and advanced courses are furnished uniforms, equipment, and textbooks for air science. Students in the advanced course are given an allowance of approximately $27 per month. Upon acceptance of this allowance, the student executes a written agreement with the United States Government and with the President of the College to complete the advanced course, completion of such course becoming a prerequisite to graduation.

Basic and Advanced Courses

The basic course requires two hours of classroom instruction and one hour of drill per week each semester. The advanced course requires four hours of classroom instruction and one hour of drill per week each semester. In addition, each student in the advanced course must attend one summer camp of six weeks. The basic course is primarily an education for citizenship in the air age. The advanced course prepares the student to assume the duties and responsibilities of junior officers in the U. S. Air Force. Students enrolled in the AFROTC program pursue their regular courses of study in fields of their choice. Major work is not offered in air science, but a minor is offered. Upon approval, air science may be used as part of the pattern for a general major.

Minor

A *minor in arts and sciences* is offered in *air science*. The minor consists of 15 to 20 units in air science and tactics, seven units of which must be in courses carrying upper division credit.

Lower Division Courses

***1A-1B. First Year Basic Air Science (2-2) Year, I**

Two hours of classroom instruction and one hour of drill per week. Introduction to the AFROTC program; moral and statutory obligations for military service; introduction to aviation; fundamentals of global geography; international tensions and security organizations; instruments of national military security; drill in basic military training.

21A-21B. Second Year Basic Air Science (2-2) Year, I

Two hours of classroom instruction and one hour of drill per week. A course that develops the purpose, processes, and primary elements of aerial warfare; the mission of the Air Force and the media for its accomplishment; career guidance; drill in cadet noncommissioned officer training.

Upper Division Courses

131A-131B. First Year Advanced (3-3) Year, I

Four hours of classroom instruction and one hour of drill per week. A course that introduces command and staff concepts in the Air Force; basic problem solving techniques, fundamental communication processes, and principles of learning and teaching; military courts and boards; elements of applied Air Science; the Air Force base; leadership laboratory.

133X. First Year Advanced (3) Summer Camp

A six-week camp required of all advanced students; normally completed between junior and senior year. Credit granted through the Extension Division on basis of individual student application with approval of the Professor of Air Science and Tactics.

141A. Second Year Advanced (3) I

Critique of summer camp and introduction to fourth year Air Science; leadership seminar; career guidance for USAF officers; military aviation and the evolution of warfare; leadership training laboratory. (Two units of general education credit will be allowed).

141B. Second Year Advanced (3) II

Military aspects of world political geography; briefing for commissioned service; leadership training laboratory. (Not open to students with credit for Geography 150).

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

ANTHROPOLOGY

IN THE DIVISION OF SOCIAL SCIENCES

Major work is not offered in anthropology; however, courses in anthropology may be included as part of a general major or social science major. Students wishing to use anthropology as a field of concentration in the *general major* should include the following courses in the lower division: Anthropology 1A-1B, 2 or 3; Geography 1, 2 or Geology 1A-1B; Sociology 50, 51; recommended: Spanish or German. The following supplementary fields of study are recommended in the upper division with a view to later specialization in anthropological work: For *archaeology:* art, geography, geology; for *physical anthropology:* psychology, statistics, and zoology; for *museum work:* art, education, and psychology. For further information on the *general major,* refer to the section on the Bachelor of Arts Degree.

Courses in anthropology may be used as part of the *social science major* for the general junior high school credential or the general secondary credential. For specific information, refer to the outlines of the requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in anthropology. The minor consists of 15 to 22 units in anthropology, nine units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in anthropology for the general secondary credential; however, anthropology may be used as a part of the *social science minor* for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the requirements for the teaching minor for these credentials.

Lower Division Courses

***1A-1B. General Anthropology (3-3) I**

Origin and antiquity of man. Theories of human descent. Classification of races. Origin and early development of civilization.

2. Physical Anthropology (3) I

An introduction to the studies of primatology and anthropometry. The comparative anatomy of the monkeys and great apes, the emergence of the anthropoids, the reconstruction of early man from fossil evidence. The landmarks, measures and indices used in the metrical study of the living human body and skeletal material. Sexual differences and growth changes in the skull and skelton. Medico-legal applications.

3. Survey of Archaeology (3) II

A review of the history of modern archeology and a discussion of its methods. The development of archaeological techniques in reconstructing the ancient cultures of the Mediterranean world. The problems of present day archaeology in the Near East, the Orient and the Americas. The principles and basic techniques used in the excavation of sites and the reporting of findings.

***54. Social Anthropology (3) II (Not offered in 1955-56)**

An anthropological study of social institutions in primitive and civilized societies. The evolution of family organization, religion, property right, and government traced in elementary and advanced civilization.

Upper Division Courses

151A. The North American Indian (3) I

Pre-Columbian cultures of the North American Indian. The origin and migration of New World peoples. Industries, arts, crafts, social organization, religion and other phases of American Indian civilization.

151B. Indian Civilization of Middle America (3) II

The development of civilization in Pre-Columbian Mexico and Central America: Aztec, Mayan, and related cultures.

***152. World Ethnography (3) I (Not offered in 1955-56)**

The cultural patterns of representative aboriginal peoples. Industries, arts, social organization and supernaturalism considered with a view to environmental adjustment, historical development and functional interrelation. Ethnological theories reviewed and applied in interpreting illustrative aboriginal societies.

153. Primitive Religion (3) II (Not offered in 1955-56)

Beliefs and ritual of primitive man. Magic and religion. Forms of animism and polytheism. Primitive mentality and the supernatural.

161. The California Indian (3) Summer

A survey of native California Indian culture with stress on the Indian groups of Southern California. The industries, arts, social organization, folklore and religion will be considered as revealed through the study of living peoples and archaeological evidences.

***165. Ethnology and Race Psychology (3) I (Not offered in 1955-56)**

The biological basis of race, somatic and serologic typology, racial mentality, tests and their ethnopsychological significance, abnormality in ethnic groups. Race and culture; ethnic aspects of demography.

172. Indian Cultures of the Southwest (3) Summer

Indian cultures of the past and present in the Southwestern states. Arts, crafts, architecture and religion as revealed through archaeology and ethnology.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

ART

IN THE DIVISION OF FINE ARTS

Major

A *major in arts and sciences* is offered in *art* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Every student who plans to major in art, whether in arts and sciences or in the teacher education program, must complete the following basic courses: Required in the major: Art A (or high school equivalent), Art B, 6A-6B, and 14A. Required in general education: Aesthetics 5 or 51 and 50.

In arts and sciences the student majoring in art may choose either a group of courses in which the crafts are emphasized or a group of courses in which the graphic arts are emphasized. One of the following plans should be selected:

Emphasis on crafts: The student should add to the list of basic courses required of all art majors the following courses in the major: lower division: Art 6D, 7, 61B and two units of art electives; upper division: Aesthetics 150, Art 106A or B or C, 106D, 111A, 117A-117B, 119A-119B, and eight units of art electives. This program leads in the direction of industrial design, interior design, cabinet making, sculpture, weaving, textile design, ceramics, etc.

Emphasis on graphic arts: The student should add to the list of basic courses required of all art majors the following courses in the major: lower division: Art 15A, 16A, and four units of art electives; upper division: Aesthetics 150, Art 106A or 106B, 112A-112B, 115A-115B, 116A-116B, 117A, and six units of art electives. This program leads in the direction of illustration, portraiture, landscape painting, mural design, poster design, production illustration, advertising design, fashion design, etc.

Art majors are not required to complete a minor.

A *teaching major in art* is offered for the general secondary and special secondary credentials. For statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *art*. The minor consists of 15 to 22 units in art, six units of which must be in courses carrying upper division credit.

A *teaching minor* is offered in *art* for the general secondary credential. Art may be offered only as a second minor for the general elementary and kindergarten-primary credential. For statement of requirements, refer to these credentials.

Art Appreciation, History and Orientation

For courses in appreciation, history of art, and art orientation, see aesthetics. Many students, regardless of the field in which they may be majoring, recognize the need for an intelligent approach to the subject of art and art appreciation. However, due to the erroneous popular feeling that art is a subject requiring "talent," these students may refrain from enrolling in art courses. For students who desire a better understanding of art, but who do not hope to acquire any of the art skills, the following courses are recommended.

	Units
Aesthetics 5, Art Orientation	2
Aesthetics 50, History and Appreciation of Art	2
Aesthetics 51, Survey of Mexican Art	2
Aesthetics 52A-52B, Survey of Oriental Art	6
Art 8, Costume and Home-furnishing	2

Other courses which require certain skills but which are not beyond the ability of the average college student are:

Art 61B, Crafts	2
Art 6A, Design	2
Art A, Drawing and Composition	2
Art 94, Costume design	2

Lower Division Courses

***A. Drawing and Composition (2) I, II**

Problems involving perspective to develop ability to draw still life, furniture, exteriors, interiors, and the like. (High school equivalent may excuse the student from this course.)

***B. Drawing and Composition (2) I, II**

Drawing of mechanical and natural forms by the use of line and value. Emphasis on proportion and structure. Some quick sketching, gesture and contour drawing. Prerequisite: Art A.

***6A. Design (2) I, II**

Fundamentals of design and composition and theory of color. Basic course used as a prerequisite for all advanced work.

6B. Design (2) I, II

Original work in creative design and representation with special stress on modern tendencies. Prerequisite: Art 6A.

***6D. Furniture Design (2) I, II**

Study of the principles of design through the making of furniture. Prerequisite: 6A.

7. Line, Color and Display (2) I, II

The principles of line, color and arrangement applied to store and window display. Study and observation of windows, color and materials used in display. Building models and practical problems in arranging colors, textures, and forms in windows to fit different kinds of merchandise. (Students taking this course for upper division credit, Art 107, will be required to do additional work.)

***8. Costume and House Furnishings (2) I, II**

An appreciative study of modern architecture and modern house furnishings, with emphasis on the spirit of gracious living and an appreciative study of the modern dress with emphasis on suitability to the figure, the personality and the occasion.

14A. Lettering (2) I

Fundamental art principles applied to lettering. Practice for quick, accurate lettering; original problems using letters as design. Prerequisite: Art 6A.

14B. Posters and Commercial Art (2) II

The application of lettering to posters, newspaper and magazine advertising, and other forms of commercial art. The study of composition combined with lettering and special study of modern tendencies in publicity. Prerequisites: Art 6A, 14A.

15A-15B. Life Drawing (2-2) Year, I, II

Drawing from the nude model. Prerequisite: Art A-B.

***16A. Painting (2) I, II**

Composition of still life in oil. Prerequisites: Art A and B, or permission of instructor.

16B. Painting (2) I, II

Landscape and more advanced composition in oil.

17A-17B. Sculpture (2-2) I, II

Creative design in such materials as clay, wood, stone, concrete, etc. Prerequisites: Art 6A-6B, or permission of instructor.

61A. Crafts in the Elementary Schools (2) I, II

A foundation course which develops unification of work of the elementary grades through activities and experiences. These experiences grow out of environmental activities. They include study and working of clay, lumber and tools, textiles, and cardboard construction. Prerequisite: Art 6A.

61B. Crafts (2) I, II

Problems involving the application of design principles to various fields—pottery, textiles, weaving, metal work, wood carving, and bookbinding. Prerequisite: Art 6A.

94A-94B. Costume Design (2-2) Year, I, II

Original designs of modern costumes suitable to the individual or to distinct types; the drawing of fashion figures; the rendering of fabrics and textures. Prerequisite: Art 6A.

95A-95B. Interior Design (See Art 195A-195B)

Upper Division Courses

105-S. Classroom Display for Teachers (3) Summer

A lecture and workshop course for elementary and secondary teachers in principles and techniques of modern display to meet various subject, classroom, and school requirements. Special attention to individual problems and needs.

106A-106B. Printmaking (2-2) I, II

Study of print crafts which includes the making of wood engravings, etchings, lithographs, and silk screen prints. Prerequisites: Art A, B, 6A.

106C. Illustration (2) II

Same as 106A-B except that printmaking is applied to problems of book illustration. Prerequisites: Art A, B, 6A.

106D. Advanced Furniture Design (2) I, II

(See Art 6D) Prerequisite: Art 6D, or permission of instructor.

107. Advanced Line, Color and Display (2) I, II

(See course description under Art 7)

111A-111B. Industrial Design (2-2) Year, I, II

Design of objects for manufacture with reference to their use, materials, and in accordance with factory practices and machine techniques. Practice in the techniques of presentation, working drawings, renderings in perspective and scale models. Prerequisite: Art 6A-6B, or permission of instructor.

112A. Design and Composition (2) I

Structure in picture making. The controlled use of line, value, color, and texture to organize the effect of depth, movement, volume, etc., in the recognizable image. Oil technique. Prerequisite: Art A-B, 6A-6B.

112B. Design and Composition (2) II

Continuation of Art 112A. Prerequisite: Art 112A, or permission of instructor.

115A-115B. Life Drawing and Painting (2-2) I, II

Drawing and painting from nude and costume models. Prerequisites: Art A-B.

115C-115D. Advanced Life Drawing and Painting (2-2) Year, I, II

Study of human figure in terms of form patterns. Prerequisites: Art 115A-115B.

116A-116B. Advanced Painting (2-2) Year, I, II

Painting in oil from still life, landscape, or models, stressing composition. Prerequisite: Art 16A or 16B.

117A-117B. Advanced Sculpture (2-2) Year, I, II

Creative design in such materials as clay, wood, stone, concrete, etc. Prerequisites: Art 6A-6B and 17A or 17B, or permission of instructor.

119A. Ceramics (2) I

Building of pottery on the basic techniques of coil, slab, mold making, and slip casting. Ceramic sculpture, glazing and kiln operations: Art 6A.

119B. Ceramics (2) II

Study of glazes and elementary clay technology. Mold making, slip casting with application to individual creative problems. Prerequisite: Art 119A.

120A-120B. Advanced Design (2-2) Year, I, II

Advanced work in pure design, two and three dimensional. Re-examination of color theory and design principles. Prerequisites: Art A-B, 6A-6B.

161A. Advanced Crafts in the Elementary Schools (2) I, II

More advanced course which develops unification of work of the elementary grades through activities and experiences. These experiences grow out of environmental activities. They include study and working of clay, lumber and tools, textiles, and cardboard construction. Prerequisite: Art 6A. Not open to students with credit for Art 61A.

166. Honors Course (Credit to be arranged) **I, II**

Refer to the Honors Program.

194A-194B. Costume Design (2-2) Year, I, II

For description, see Art 94A-94B. Prerequisite: Art 6A.

195A-195B. Interior Design (2-2) I, II

The consideration of the house as a unit; the arrangement of garden, house, floor plan, and furniture as functional and decorative problems. Prequisites: Art A and 6A; 195A is a prerequisite for 195B.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

200A-200B. Special Problems (2-2) I, II

A graduate course in which students may carry out projects in various fields of art under the direction of faculty members who are specialists in the field chosen. Students registering for this course must apply for work within a certain field after discussions with the art faculty.

290. Bibliography (1) I, II

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis or Project (3) I, II

Guidance in the preparation of a project or thesis for the master's degree.

ASTRONOMY

IN THE DIVISION OF PHYSICAL SCIENCES

Major work is not offered in astronomy. Students desiring to prepare for advanced work in astronomy should include the following courses: Astronomy 1, 2, 3, 9, and 10; Mathematics 3A-3B, 4A-4B; Physics 4A-4B-4C; a reading knowledge of French and German.

Courses in astronomy may be used as part of the general science major for the junior high school credential and the physical science and general science major for the general secondary credential. For specific information, refer to the outline of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in astronomy. The minor consists of 15 to 22 units in astronomy, nine units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in astronomy; however, astronomy may be used as part of the *general science minor* for the special secondary, the general elementary, and the kindergarten-primary credentials and for the physical science and general science minor for the general secondary credential. For specific information, refer to these credentials.

Lower Division Courses

***1. Descriptive Astronomy (3) I, II**

A cultural course planned to develop an appreciation of astronomy with emphasis on the solar system. Attention is given to the methods by which astronomical knowledge has been gained. A six-inch refractor and an eight-inch reflecting telescope are available for observation.

***2. Modern Astronomy (3) II**

A study of the stellar system in the light of modern research, especially photographic and spectrographic. Prerequisite: Astronomy 1 or permission of the instructor.

***9. Practice in Observing. (1) I, II**

A course designed to supplement Astronomy 1. The course will include constellation study, use of astronomical coordinates, and descriptive observations of celestial objects with the telescope. One three-hour evening laboratory period each week. Recommended: Astronomy 1 or concurrent registration in Astronomy 1, or completion of Physical Science 1 or 5.

10. Advanced Observational Astronomy (1) II

A continuation of Astronomy 9. More advanced problems in observing will be taken up such as the determination of latitude by observations of Polaris, transit observations, astronomical photography, etc. One three-hour evening laboratory period each week. Prerequisite: Astronomy 9.

12. Elementary Navigation (3) I

A study of compass corrections, time, line of position, use of celestial coordinates, etc. A few class hours devoted to the use of tables such as H.O. 214 for the solution of astronomical triangle. One laboratory period each week. Astronomy 1 and 9 desirable.

Upper Division Courses

103. Astronomical Optics (2) II

This course aims to acquaint the students with the optics and methods of testing of an astronomical telescope. The course consists of one lecture and one laboratory period each week. The student is required to grind a four-inch astronomical telescope mirror. Prerequisite: Astronomy 1 or permission of instructor.

***105. Historic Development of Astronomy (3) I (Not offered 1955-56)**

A study of the more important problems and astronomical concepts in the light of their historical development. Particular attention is given to the biography and contributions of the more important astronomers, such as, Galileo, Kepler, Newton, Herschel, Bessel, etc.

107. Method of Least Squares and Computing Practices (3) I
(Not offered 1955-56)

Fundamental principles with applications in the fields of astronomy, physics, and engineering. Prerequisite: Math 4A or equivalent.

110. Introducion to Study of Variable Stars (3) II

A study will be made of the various types of variable stars, their spectra, periods, methods of observing, etc. In the laboratory the light curve of several typical variables will be observed. Two lectures and one laboratory period each week. Prerequisite: Astronomy 2. Astronomy 9 desirable.

112. Elementary Astrophysics (3) I (Not offered 1955-56)

A lecture course in the application of physics to astronomy: Much of modern astronomical research is in the field of astrophysics. An occasional laboratory period will be substituted by appointment for the lecture period. Prerequisites: Astronomy 2 or college physics.

113. Surveyor's Course in Practical Astronomy (3) II

The principles of spherical astronomy adapted to the needs of engineering students. Computation and observation. Two lectures and one three-hour laboratory period each week. Prerequisite: Engineering 1A or permission of the instructor. Astronomy 1 and 9 desirable.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisites: three units in astronomy and permission of instructor.

BACTERIOLOGY

IN THE DIVISION OF LIFE SCIENCES

A *major in arts and sciences* is offered in *bacteriology* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses, except that nine units in natural science may be applied toward general education requirements. Lower division requirements: in the major, Bacteriology 1 or 101; in related fields, either Biology 3 and 4, or Zoology 1, or equivalent; Chemistry 1A-1B and Chemistry 5A; and Biology 15, or equivalent. Recommended: French or German; Mathematics 7A-7B; Physics 2A-2B and 3A-3B; and Zoology 8A-8B or Zoology 101. Upper division requirements: 24 units in bacteriology and related fields to include Bacteriology 102, 103, Chemistry 101A, 114A, and additional courses in bacteriology. Zoology 128 and 109 are recommended as courses to be included in the major. A minor is not required of students majoring in bacteriology.

A *major in arts and sciences* is offered in *bacteriology* for the B.S. degree. Courses in the major are in addition to 45 units in general education courses, except that nine units in natural science may be applied toward general education requirements. Lower division requirements: in the major, Bacteriology 1; in related fields, either Biology 3 and 4, or Zoology 1, or equivalent; Chemistry 1A-1B and Chemistry 5A; and Biology 15, or equivalent. Recommended: German or French; Mathematics 7A-7B; Physics 2A-2B and 3A-3B; and Zoology 8A-8B. Upper division requirements: 36 units in bacteriology and related fields to include Bacteriology 102, 103, 104, 105, and 107; Zoology 128; and Chemistry 101A, 114A. A minor is not required for the B.S. degree.

A *teaching major* is not offered in bacteriology; however, courses in bacteriology are included in the *major in life science and general science* for the general secondary credential and the *major in general science* for the junior high school credential. For specific information, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *bacteriology*. The minor consists of 15 to 22 units in bacteriology to include Bacteriology 1 or 101, 102, 103, and the remainder of the units to be chosen from Bacteriology 104, 105, 107, and 199. Recommended courses to supplement the minor: Zoology 8A-8B; Chemistry 101A, 114A.

A *teaching minor* is not offered in bacteriology; however, bacteriology may be used as part of the *general science minor* for the special secondary, the general elementary, and the kindergarten-primary credentials or as part of the *minor in life science and general science* for the general secondary credential. For specific information, refer to these credentials.

Lower Division Courses

1. General Bacteriology (4) I

An introduction to bacteriology. Effects of physical and chemical agencies upon bacteria; biochemical activities of bacteria; microscopic examination and cultivation of bacteria; the bacteria of air, water, soil, milk and dairy products, other foods; industrial applications. Introduction to disease-producing bacteria. Two hours of lecture and six hours of laboratory per week. Prerequisite: Chemistry 1A or 2A. (Chemistry 1A-1B for minor in bacteriology.)

Upper Division Courses

101. General Bacteriology (4) II

Lectures and laboratory work of Bacteriology 1 with additional work to be prescribed by the instructor. Prerequisite: Chemistry 1A or 2A. (Chemistry 1A-1B for major in bacteriology.)

102. Advanced Bacteriology (4) I

Agents of disease and methods of host resistance. Laboratory experience in diagnosis of bacterial pathogens and antibiotic sensitivity. Concepts of virulence and pathogenicity, considering the host-parasite relationship. Two lectures and six hours of laboratory per week. Prerequisites: Bacteriology 1 or 101; also Chemistry 101A. Recommended: biochemistry and physiology.

103. Fundamentals of Immunology and Serology (4) II

Antigen-antibody reactions, the immunochemistry of protein and nonprotein cell substances, hemo-serology, and theoretical and pathologic aspects of hypersensitivity. Laboratory diagnosis by use of serological techniques. Two lectures and six hours of laboratory per week. Prerequisites: Bacteriology 1 or 101; also Bacteriology 102 and Chemistry 101A. Recommended: biochemistry and physiology.

104. Medical Mycology (3) I

A study of the mycotic agents of disease and methods of systematic identification of such agents. Concept of epidemiology, diagnosis, pathology, and host-responses are considered. Two lectures and three hours of laboratory per week. Prerequisites: Bacteriology 1 or 101; also Bacteriology 102 and Chemistry 101A.

105. Bacterial Metabolism (2) II

A course to provide a basic knowledge of the principles by which micro-organisms derive energy to support the life processes. Prerequisites: Bacteriology 1 or 101, Chemistry 101A. Recommended: biochemistry, Bacteriology 102 and 103.

107. Virology (2) I

A survey of viruses and Rickettsias as agents of disease. An introduction to virological techniques, and routes of infection with further consideration of concepts of epidemiology, diagnosis, pathology, and host-responses. Prerequisites: Bacteriology 102, 103, or equivalent, or permission of instructor.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisites: 15 units of work in the life sciences (including courses in bacteriology) with grades of A or B; and permission of instructor.

Graduate Courses

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

BIOLOGY

IN THE DIVISION OF LIFE SCIENCES

Major or minor work is not offered in biology (see bacteriology, botany, life science, and zoology); however, courses in biology may be used as part of the botany, life science, or zoology majors and minors for the A.B. and B.S. degrees, and the bacteriology major for the B.S. degree; or the general science minor for majors in education or the special secondary curriculums; or the life science and general science major and minor for the general secondary credential.

Lower Division Courses

***1. The Ideas of Biology (3) I, II**

General concepts of biology with emphasis on the biology of man in relation to modern life. This course does not meet the laboratory requirement in natural science for general education. Not open to students with credit for Biology 3 or 4; Botany 1, 2A, or 2B; or Zoology 1, 1A, or 1B.

***3. Principles of Biology (3) I, II**

A consideration of basic biological phenomena. Two hours of lecture and three of laboratory each week. Not open to students with credit for Biology 1; Botany 1, 2A, 2B; or Zoology 1, 1A, 1B.

***4. Natural History of Plants and Animals (3) I, II**

An introduction to plants and animals in relation to their environments and to one another, with emphasis on local forms and their habitats. Two lectures and three hours of laboratory per week. Not open to students with credit for Zoology 1, 1A; or Botany 1, or Botany 2A.

15. Introduction to Quantitative Biology (3) II

Methods for defining and solving biological problems; quantitative method as a fundamental approach to biology. Prerequisites: Passing grade in Mathematics competency examination or Mathematics X; also one semester college biological science.

Upper Division Courses

102. Principles of Taxonomy (2) I

The classification of living organisms. Rules of botanical and zoological nomenclature, type categories, principles, and procedures. Prerequisite: Biology 15.

110. Ecology (4) II

Relationships between organisms and the environment; field study in local marine, fresh water, mountain, chaparral, and desert habitats. Two hours of lecture and six hours of laboratory per week. Prerequisites: Zoology 1 and Botany 1, or Biology 3 and 4; Biology 15; and Chemistry 1A-1B or Chemistry 2A-2B.

134. Microtechnique (3) I, II

Introduction to methods of preparation of plant and animal tissues for microscopic study. One hour of lecture and six hours of laboratory per week. Prerequisites: One year of college chemistry; and Botany 1 or 2A-2B, or Zoology 1 or 1A-1B, or Biology 3. Not open to students with credit for Zoology 104.

155. Genetics (3) II

Principles of plant and animal genetics, with experiments and demonstrations illustrating the mechanisms of heredity. Two hours of lecture and three hours of laboratory per week. Prerequisites: Botany 1 or 2A-2B, and Zoology 1 or 1A-1B (or Biology 3); and Biology 15. Not open to students with credit for Botany 155 or Zoology 155.

158. Conservation of Wildlife (3) II

A survey of plant and animal resources with emphasis on their conservation and intelligent use. Prerequisite: A college course in biology or consent of the instructor. Not open to students with credit for Botany 158 or Zoology 158.

160. Evolution (2) II

The development of theories of organic evolution. Prerequisites: Botany 1 and Zoology 1, or Biology 3 and 4. Not open to students with credit for Botany 160 or Zoology 160.

***161. History of Biology (3) II**

Lectures and reports tracing biological scientific development, with emphasis on the influence of personalities and trends of the times.

170-S. Contemporary Problems in Biology (1)

A series of six weekly lectures on varied aspects of biology by scientists engaged in research. Reading and reports required of students enrolled for credit. These lectures are open to the public. May be repeated for a total of 3 units.

189. Clinical Laboratory Procedures (4) II

Experience in laboratory procedures in the college health services and science laboratories, with instruction in the appropriate fields of the licensing examinations. Twelve hours of laboratory and discussion per week. Prerequisites: Zoology 109; Bacteriology 102, 103, and 104; and Chemistry 114A and 114B, taken concurrently or previously.

198. Methods of Investigation (2) I, II

Individual and original investigations in biology; class reports. One hour of discussion and three hours of laboratory per week. Four units maximum credit. Prerequisites: Senior standing and a major in the Division of Life Sciences.

Graduate Courses

200. Seminar (2) I, II

An intensive study on an advanced level of one of the following fields of biology. None of the fields may be repeated for credit.

A. Applied Biology
B. Cellular Biology
C. Ecology
D. Modern Theories of Biology
E. Morphogenesis
F. Speciation

BOTANY

IN THE DIVISION OF LIFE SCIENCES

Major

A *major in arts and sciences* is offered in *botany* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Botany 1 and Zoology 1, or Biology 3 and 4; Biology 15; and Chemistry 1A-1B or Chemistry 2A-2B. Recommended: German, French, or Spanish, Bacteriology 1 or 101, and Geology 1A-1B or Geology 2 and 3. (Nine units in natural science may be counted toward general education requirements.) Upper division requirements: A minimum of 24 upper division units, at least 18 of which must be in botany and biology, including Botany 101A-101B, 107, and 114; and six units of which may be in related courses in bacteriology, chemistry, geology, and zoology, selected with the approval of the departmental adviser. A minor is not required.

A *major in arts and sciences* is offered in *botany* for the B.S. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Botany 1 and Zoology 1, or Biology 3 and 4; Biology 15; and Chemistry 1A-1B or Chemistry 2A-2B. Recommended: German, French, or Spanish, Bacteriology 1 or 101, and Geology 1A-1B or Geology 2 and 3. (Nine units in natural science may be counted toward general education requirements.) Upper division requirements: 36 units in botany and related fields, including Botany 101A-101B, 107, 114, and Biology 155. Chemistry 101A and Biology 161 are strongly recommended.

A *teaching major* is not offered in botany; however, courses in botany are included in the *major in life science and general science* for the general secondary credential and the *major in general science* for the junior high school credential. For specific information, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *botany*. The minor consists of 15 to 22 units in botany, six units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in botany; however, botany may be used as part of the *general science minor* for the special secondary, the general elementary, and the kindergarten-primary credentials or as part of the *minor in life science and general science* for the general secondary credential. For specific information, refer to these credentials.

Lower Division Courses

1. General Botany (5) I, II

Fundamentals of structure, general behavior, and interrelationships of plants. Three hours of lecture and six hours of laboratory per week. Not open to students with credit for Botany 2A-2B.

Upper Division Courses

101A-101B. Plant Morphology (4-4) Year, I

The first semester covers the development and phylogenetic relationships of the algae, fungi, and bryophytes. The second semester covers the structure, development, and phylogenetic relationships of the vascular plants. Two hours of lecture and six hours of laboratory per week. Prerequisites: Botany 1, or Biology 3 and 4.

107. Plant Physiology (4) II

The activities of plants, including food manufacture, absorption, conduction, transpiration, respiration, growth and movement. Two lectures and six hours of laboratory per week. Prerequisites: Botany 1 or permission of instructor, and Chemistry 2A-2B or equivalent.

114. Systematic Botany (4) I

Kinds, relationships, systematic arrangement, and geographical distribution of vascular plants; collection and identification. Two hours of lecture and six hours of laboratory per week. Prerequisites: Botany 1 or equivalent and Biology 102.

119-S. Field Botany (4) Summer

Local native vegetation with emphasis on ecological units within floristic areas. Primarily for students not majoring in the Life Science Division. Two units of lecture and two units of laboratory.

126. Plant Pathology (4) II

A practical course dealing with the principles of disease in plants, control measures, and quarantine procedures. Emphasis is placed on the determination and control measures of those pathogenic organisms which affect crops, trees and shrubs and nursery stock. Two lectures and six hours of laboratory per week. Prerequisites: Botany 1 or equivalent and Botany 101A-101B.

162. Agricultural Botany (2) I

A study of California crop plants, their general identification, cultural methods, and regional distribution. Field trips to be arranged. Prerequisite: Botany 1 or equivalent.

166. Honors Course (Credit to be arranged) **I, II**

Refer to the Honors Program.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisites: 15 units in botany with grades of A or B; and permission of instructor.

Graduate Courses

290. Bibliography (1) I, II

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis or Project (3) I, II

Guidance in the preparation of a project or thesis for the master's degree.

BUSINESS CURRICULA
IN THE DIVISION OF BUSINESS

Majors in various fields of *business* are offered for the B.S. degree by the Division of Business, which consists of three departments: Accounting and Business Management Department, offering majors in accounting, banking and finance, business management, credit management, engineering management, industrial management, and insurance; Business Education, Secretarial and Office Management Department, offering majors in general business, office management, and secretarial management; Marketing Department, offering a major in marketing with the B.S. degree, and a major in personnel management with the A.B. degree.

Each major is in addition to 45 units in general education courses. A minor is not required. Students electing to take a minor must select one outside the field of business. Each major is described below, under the department offering the major.

DEPARTMENT OF ACCOUNTING AND BUSINESS MANAGEMENT

Majors

Accounting: Lower division: Business 2, 8, 14A-14B, 18A-18B; and Economics 1A-1B (which may be counted toward general education requirements). Upper division: A minimum of 36 upper division units to include Economics 111 or 170 or Business 123; Economics 140; Business 121; and 27 units selected from Business 118A-118B, 133, 160A-160B, 161A-161B, 162, 163, 164A-164B, 165A-165B, 167, 168, and 169.

Banking and Finance: Lower division: Business 2, 8, 14A-14B, 18A-18B; and Economics 1A-1B (which may be counted toward general education requirements). Upper division: A minimum of 36 upper division units to include Economics 111 or 170 or Business 123; Economics 135, 140; Business 121, 133, 134, 160A; and 15 units selected from Business 105A, 118A-118B, 125, 137, 153, 154, 162, 163; Economics 102, 131, 142, and 190.

Business Management: Lower division: Business 2, 8, 14A-14B, 18A-18B; and Economics 1A-1B (which may be counted toward general education requirements). Upper division: A minimum of 36 upper division units to include Economics 111 or 170 or Business 123; Economics 140; Business 121; and 27 units selected from Business 118A-118B, 123, 125, 126, 133, 134, 137, 139, 153, 154, 163, 173, 174, 175, 176, 177, 178, 180, 182, and 184; Economics 131, 135, 138, 142, 150, and 151.

Credit Management: Lower division: Business 2, 8, 14A-14B, 18A-18B; and Economics 1A-1B (which may be counted toward general education requirements). Upper division: A minimum of 36 upper division units to include Economics 111 or 170 or Business 123; Economics 140; Business 121, 137, 138; and 21 units selected from Business 103A, 123, 133, 134, 160A-160B, 162, 163, 186; Economics 105, 135, 138, 142, and 170.

Engineering Management: Open only to students who have completed the four-year curriculum in Industrial Engineering, or its equivalent. (Refer to the Engineering section of this catalog for specific information. Students should also consult with the departmental adviser in engineering regarding the Industrial Engineering curriculum). The major in Engineering Management consists of 32 units as approved by the candidate's adviser. Programs designed to meet the needs and interests of each particular student may be arranged. The following is a suggested pattern for the 32 units: Business 118B, 133, 161A-161B, 175, 178, 198A; Economics 170; Engineering 141; electives, 6 units.

Industrial Management: Lower division: Business 2, 8, 14A-14B, 18A-18B; Economics 1A-1B (which may be counted toward general education requirements); Industrial Arts 5 (general education) and Industrial Arts 21; Engineering 23. Upper division: A minimum of 36 upper division units to include Economics 140 and 170 or 111, Business 121 and 123; 12 units selected from the following: Business 161A-161B, 173, 174, 175, 176, 177, 178; and 12 units selected from: Business 103A, 105C, 125, 133, 153, 154, 155, 160A-160B, 163, 180; Economics 142, 150, 151; Psychology 121.

Insurance: Lower division: Business 2, 8, 14A-14B, 18A-18B; and Economics 1A-1B (which may be counted toward general education requirements). Upper division: A minimum of 36 upper division units to include Economics 111 or 170 or Business 123; Economics 140; Business 121; and 27 units selected from Business 118A-118B, 125, 126, 127A-127B, 128A-128B or 128C-128D or 128E-128F, 133, 134; Economics 131, 135, 138, 139, 142, and 185.

Minor

A *minor in arts and sciences* is offered in *business* with specialization in one of the major fields listed above, to students who are not business majors. The minor consists of 15 to 22 units in business courses, six units of which must be in upper division courses selected from one of the major fields listed above. Business 14A-14B must be included in the minor.

DEPARTMENT OF BUSINESS EDUCATION, SECRETARIAL AND OFFICE MANAGEMENT

Majors

General Business: Lower division: Economics 1A-1B and Business 20 or 120 (these courses may be counted as part of general education requirements); Business 1B, 8, 14A-14B, 18A, 25; and the requirements in *two* of the subfields listed below, of which *accounting* or *secretarial* must be one. Recommended: Geography 10.

Subfields:

Accounting: Select three units from Business 2, 21, or 24.
Business Management: Business 18B.
Merchandising: Business 24.
Secretarial: Business 5B. (If satisfied, select three units from Business 2, 21, or 24.)

Upper division: Business 105A-105B, 108, 121; and the requirements in *two* of the subfields listed below, of which *accounting* or *secretarial* must be one. The two fields selected in the lower division must be continued in the upper division.

Subfields:

Accounting: Select six units from Business 160A, 160B, 161A, or 164A, and six units from Business 103A, 123, 134, 153, 154, 161B, Economics 150 or 170.
Business Management: Select six units from Economics 140, Business 103A, 125, 133, 154, or 184, and six units from Business 134, 160A, 160B, 161A, 161B, 164A, 164B, Economics 150 or 170.
Merchandising: Business 123 plus three units selected from Business 182, 185, 186, 187, or Art 107, and six units from Business 103A, 124, 125, 134, 137, 153, 154, 184, Economics 150 or 170.
Secretarial: Business 113A-113B, and six units from Business 105A, 123, 125, 134, 153, 154, 164A, 185, Economics 150 or 170.

Office Management: Lower division: Business 1A or 2A (or equivalent), 2, 8, 14A-14B, and 18A-18B. Upper division: 42 upper division units consisting of the following courses: Business 103A, 105A-105B, 108, 121, 137, 153, 154, 160A, 161A, 196; Economics 140, 170; and Psychology 121.

Secretarial Management: Lower division: Business 1A-1B, 5A-5B, 8, 14A-14B, and 18A-18B. Upper division: 39 upper division units consisting of the following courses: Business 103A, 105A-105B, 108, 113A-113B, 125, 134, 153, 164A, 185, and 196.

Major for Teaching Credentials

A *teaching minor in business education* is offered for the special secondary and general secondary credentials. For a statement of requirements, refer to these credentials.

Minors

A *minor in arts and sciences* is offered in *business* with specialization in one of the major fields listed above. The minor consists of 18 to 22 units to include Business 14A-14B and either Business 1A-1B or Economics 1A-1B; and six or more upper division units selected from courses in one of the major fields listed above.

A *minor in arts and sciences* is offered in *secretarial management.* This minor consists of 23 units. The student must demonstrate competency equal to that required in Business 1A-1B before he can be admitted to the minor program. The minor must include Business 5A-5B, or their equivalent, in the lower division, and 13 units in the upper division to include Business 113A-113B and one of the following: Business 105A, 105B, or 108.

Minor for Teaching Credentials

A *teaching minor in business education* is offered for the general secondary credential. For a statement of requirements, refer to this credential.

DEPARTMENT OF MARKETING

Major

Marketing: Lower division: Business 8, 14A-14B, 18A-18B, 24, 25; Economics 1A-1B (which may be counted toward general education requirements); and Business 20 and Art 7 (Business 120 and Art 107 may be substituted if taken in the upper division as part of the major). Upper division: A minimum of 36 upper division units to include Business 121, 123, 153, Economics 140, and 23 units chosen from Business 120, 124, 137, 154, 155, 180, 181, 182, 184, 185, 186, 187, 188, 189, Home Economics 119A, 119B, Art 107.

Personnel Management: For a description of this major, refer to Personnel Management Curricula in this section of the catalog, Announcement of Courses.

Minor

A *minor in arts and sciences* is offered in *business* with specialization in marketing. The minor consists of 15 to 22 units in business, six units of which must be in courses carrying upper division credit. Students electing business as a minor with specialization in marketing should consult with the adviser in marketing for selection of courses.

BUSINESS COURSES

Lower Division Courses

A. Business Mathematics (1) I, II

A practical course in the mathematics of business. A thorough study of interest, compound interest, discount, insurance rates, etc.

1A-1B. Typewriting (3-3) Year, I, II

Development of a command of a keyboard, acquisition of speed and the artistic arrangement of typewritten material with special reference to commercial forms, tabulation and billing. (1A is a prerequisite for 1B.) Business 1A is not open to students with credit for Business 2A.

2. Mathematics of Finance (3) I, II

Interest and annuities; amortization; sinking funds; valuation of bonds; depreciation; mathematics of building and loan associations. Prerequisites: Two years of algebra in high school, or equivalent.

2A. Personal-use Typewriting (3) I, II

A short course designed for those not wishing to enter the business office but desiring a knowledge of or skills in the use of the typewriter. Five hours laboratory practice. Not open to students with credit for Business 1A.

3A. Office Machines: Rotary Calculator (1) I, II

A six-weeks course designed to teach students the operation of the rotary calculator. Operations basic to statistics, accounting, and other areas needing this skill will be stressed. Not open to students with credit for Business 105A.

3B. Office Machines: Key-driven Calculator (1) I, II

Same as 3A, except the key-driven calculator is substituted for the rotary calculator. Not open to students with credit for Business 105A.

3C. Office Machines: Printing Calculator (1) I, II

Same as 3A, except the printing calculator is substituted for the rotary calculator. Not open to students with credit for Business 105A.

4. Introductory Typewriting (1) I, II

A short, introductory course building the fundamentals of typing in a six-weeks period. Students enroll for the first six weeks, the second six weeks, or the third six weeks in a semester. Not open to business education or secretarial majors.

5A-5B. Shorthand (5-5) Year, I

An intensive course designed for the practical preparation of office secretaries. A thorough study of the Gregg System. Development of the ability to read and write shorthand rapidly and correctly, both literary and commercial. The shorthand speed necessary to pass a civil service examination is attained by the end of the year. (5A is a prerequisite for 5B.)

6A-6B. Advanced Shorthand (3-3) Year, I, II

Development of speed in writing and transcription. Advanced dictation on letter forms, legal forms, speeches, and literary and technical material. Prerequisites: Business 5A-5B or equivalent. (6A is a prerequisite for 6B.)

8. Business Communication (3) I, II

A course designed to give training in writing as a means of solving modern business problems. Prerequisites: English 1 and Business 2A or its equivalent.

14A-14B. Principles of Accounting (3-3) I, II

The balance sheet; profit and loss statement; the opening, conducting, and closing of books for different kinds of businesses; organizations, reorganizations, dissolutions, and consolidations, etc., keeping in view the best modern accounting practice. Five hours lecture and laboratory. (14A is a prerequisite for 14B.)

18A-18B. Business Law (3-3) I, II

The fundamental principles of business law. Cases showing the actual application of the principles to business transactions. The subjects covered: First semester, to include contracts, sales, agency, personal property; second semester, negotiable instruments, real property, wills, partnerships, corporations, and insurance. Business 18A is a prerequisite for 18B.

***20. Consumer Income Management (3) I, II**

Functions and responsibilities of consumers; problems of choice-making; planning expenditures for housing, household operation, insurance and investments. Economics of installment buying, borrowing procedures, control of frauds, legislation affecting consumers. Not open to students with credit for Business 120.

21. Organization and Management of Small Business (3) I

Problems confronting the small business man with regard to finance, organization, management. Reasons for failures and success in small business. Specific study of various kinds of small businesses.

24. Retailing (3) I, II

Study of retail stores, emphasizing the problems of store managers and merchandising executives; store location, organization, personnel, sales promotion, buying and handling of merchandise, inventory, turnover, and control methods. Problems of profitable operation under changing conditions.

25. Salesmanship (3) I, II

Theoretical and psychological backgrounds of salesmanship, newer concepts of selling; the selling of ideas and services; steps in a sale: Attention, interest, desire, closing; the development of clienteles and of good will; the personal factor in salesmanship.

26. Applied Salesmanship (2) II

Practice in selling; supervised work in cooperating stores, or outside selling; relationships between theory and practice. Prerequisite: Business 25 and permission of instructor.

65A-65B. Record Keeping. (1-3 each semester) Year, II

Application of accounting practice and principles to accounting practice; the technical arrangement of accounting forms, records and reports found in business. Prerequisite: Business 14A. Business 65A is a prerequisite for 65B.

Upper Division Courses

103A. Office Management (3) I, II

A study of the functions of the office, duties of the office manager, organization of the office, communication functions, physical facilities involved, personnel relationships of management and worker, and the controls necessary for efficient output.

105A. Office Systems (3) I, II

A course designed to develop fundamental skills in the instructional figuring and bookkeeping machines used in offices, together with their interrelating functions as these affect office systems. Not open to students with credit for Business 3A or 3B or 3C.

105B. Office Systems (3) I, II

The relationship of voice-writing, addressing, and duplicating machines to office procedures and routines is studied and skills developed in these areas of use.

105C. Office Systems: Accounting Machines (1) I, II

An introduction to the use of machines in accounting systems, their operation, potentialities, and limitations. Designed primarily to acquaint accounting majors with the operational aspects of accounting machines.

108. Records Management (3) I, II

Intensive survey of the various means of preparing, keeping, storing, and disposing of office records to facilitate the efficient management of business. Various systems of records management will be studied together with the equipment and supplies required.

113A-113B. Secretarial Office Practice (5-5) Year, I

Practice in the duties and routines of office work as required of the stenographer and secretary with special emphasis on the shorthand dictation and transcription problems arising in various types of offices. Prerequisites: Business 1A-1B, 5A-5B, or their equivalent.

118A-118B. Advanced Business Law (3-3) Year, I, II

An advanced study of the law of personal and real property, partnership, corporation and the laws regulating trade and trade practices and competition. Elective for business majors.

***120. Consumer Income Management (3) I, II**

Functions and responsibilities of consumers; problems of choice-making; planning expenditures for housing, household operation, insurance and investments. Economics of installment buying, borrowing procedures, control of frauds, legislation affecting consumers. Not open to students with credit for Business 20.

121. Business Management (3) I, II

Problems of business management as an interrelated whole. A discussion of the problems of the business manager with particular reference to the character of the problems involved and to the control policies and devices of the manager. Prerequisites: Economics 1A-1B.

123. Marketing Principles (3) I, II

Study of marketing functions; activities of producers, wholesalers, retailers and other middlemen; channels of distribution; integration of marketing activities; price policies; government regulation. Prerequisite: Economics 1A-1B.

124. Marketing Administration (3) II

An advanced course dealing with practical aspects of marketing. Solutions of problems faced by producers, wholesalers, retailers and other middlemen in the marketing of their products. Prerequisite: Business 123.

125. General Insurance (3) I

Economic theory of risk; transfer of risk; distribution and prevention of loss; types of insurance carriers; problems of rate making; the insurance contract; coverages; special forms of life, fire, marine and casualty insurance; state supervision.

126. Casualty Insurance (6) II

The nature and reasons for existing practices in compensation and casualty insurance. The social and legal bases of insurance, fundamental principles of rate making, policy provisions, state regulation and state insurance. Prerequisite: Business 125.

127A. Life Insurance—Principles and Practice (3) I

Types of life insurance companies and associations, home office and agency organization, types of contracts, surrender value, policy loans and extended insurance, surplus and dividend policies, reserves, group, industrial and social insurance, and state supervision.

127B. Life Insurance Salesmanship (3) II

Special problems of life insurance selling, with emphasis on the psychological aspects of insurance selling, on specific techniques for finding propects, for managing the sales interview. For students interested in life insurance selling, and those planning to obtain life underwriter's certification.

128A-128B. Advanced Life Insurance (3-3) Year, I

An advanced course in life insurance. The emphasis is on preparation for the C. L. U. Certificate. 128A is a prerequisite for 128B.

128C-128D. Advanced Life Insurance (3-3) I

Prepares the student for Part D of the Chartered Life Underwriters examination showing how life insurance strengthens banking credit, financial structure of corporations, and partnerships; also, life insurance as an investment. Business 128C is a prerequisite for Business 128D.

128E-128F. Advanced Life Insurance (3-3) Year, I

Prepares for part of the Chartered Life Underwriters examination. Covers the four sections, "Life Insurance Fundamentals," "General Education," "Law, Trust and Taxes," and "Finance"; teaches proficiency in the analysis of cases or problems. Business 128E is a prerequisite for Business 128F.

E-129. C. P. C. U. Preparation (3) (Extension)

Preparation for the examination for Chartered Property Casualty Underwriter. Covers the first section of Part I of Insurance Principles and Practices.

133. Corporation Finance (3) I (Same course as Economics 133)

The corporate form of organization, instruments of long-time finance, methods of raising capital, efficient financial management, the financing of reorganizations, and governmental control. Not open to students who have credit for Economics 133.

134. Investments (3) I, II

Investment principles and practices with emphasis upon problems of the small investor, such as tests of a good investment, sources of information, types of stocks and bonds, mechanics of purchase and sale, investment trusts, real estate mortgages, and the like.

137. Credits and Collections (3) I, II

The credit man and his work, including the instruments with which he works, sources of credit information, the technique of his department, collection methods, legislation for the protection of debtor and creditor, and credit insurance. Prerequisites: Business 14A-14B.

138. Credit Management (3) II

Problems involved in credit and financial management, including methods of developing credit policies, organizing a credit department or institution, supervising and coordinating the work of subordinates in the credit field. Prerequisite: Business 137.

139. Real Estate Principles and Practices (3) II
(Same course as Economics 139)

Functions and regulation of the real estate market; transfers of property, including escrows, mortgages, deeds, title insurance; appraisal techniques; financing methods; leases; subdivision development; property management. Not open to students with credit for Economics 139.

153. Personnel Management (4) I, II

Problems in the management of personnel relations, including techniques of selecting, training, supervising and rating employees. Methods used by management in job evaluation; wage and salary payment plans; employee services; health and safety; union relationships; stimulation of interest.

154. Wage and Salary Administration (3) I
(Same course as Political Science 146)

Problems of job analysis; major techniques of job evaluation, including ranking, classification, point system, factor comparison; problems of wage and salary administration, incentive pay methods; merit rating plans. Not open to students with credit for Political Science 146.

155. Supervisory Staff and Employee Training (3) II
(Same course as Political Science 181)

Training as a management function and as an aspect of communication; operating methods and structure of training departments; types of training; use of community facilities; evaluation of training results. Projects designed to meet special student needs. Not open to students with credit for Political Science 181.

E-156. Training Methods in Business and Government (3) (Extension)
(Same course as Political Science E-188)

Preparation of supervisors and others to teach employees. Development of course outlines, lesson plans, training aids, and tests; emphasis on student practice in demonstration teaching. Not open to students with credit for Political Science E-188. Prerequisite: permission of instructor.

157. Human Relations in Management (2) II
(Same course as Political Science 145)

Human factors in supervision and management. Problems of incentives, attitudes, communication, and other personal relations between employee and employer. Bases of effectiveness of various types of leadership. Discipline and grievances. Prerequisite: permission of instructor. Not open to students with credit for Political Science 145.

160A-160B. Advanced Accounting (3-3) Year, I

An intensive study of the corporation, its accounting and financial problems; a thorough study of the balance sheet; depreciation; factory accounting, etc. Prerequisites: Business 14A-14B. (160A is a prerequisite for 160B.) Required of accounting majors.

161A-161B. Cost-Accounting (3-3) Year, I

Principles and methods of cost accounting in the mercantile establishment and in the factory. A study of industrial accounting procedure, the forms used, and their application to practical problems. Prerequisites: 14A-14B; 161A is a prerequisite for 161B.

162. Accounting Systems (3) II

The accounting systems used in various types of business and financial concerns. Some practice in devising and installing systems. Prerequisites: Business 160A-160B, 105C. Business 105C may be taken concurrently.

163. Financial Statements (3) II

The construction, composition, analysis and interpretation of accounting reports with particular emphasis on the form, content and phraseology of reports. Prerequisite: Business 14A-14B.

164A-164B. Income Tax Procedure (3-3) Year, I

A study of the laws and a consideration of the problems arising from state and federal income, inheritance and corporation tax. Prerequisites: 14A-14B and senior standing or consent of instructor. (164A is prerequisite for 164B.)

165A-165B. Auditing (3-3) Year, I

The fundamental principles of accepted procedures of auditing and related types of accounting engagements. 165A is a prerequisite for 165B. Prerequisites: Business 160A-160B.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

167. Governmental Accounting (3) I

A comparative study of accounting systems used by municipalities, counties, and the State of California; detailed comparisons with commercial practice; procedures in handling budget accounts, appropriations, and encumbrances; subsidiary records; cost records; internal checks; auditing. Prerequisite: 160A-160B or consent of the instructor.

168. Internal Auditing and Controllership (3)

The place and functions of the controller and internal auditor in business enterprises; accounting systems and methods related to functions as internal check and audit control of routine transactions. Prerequisites: Business 160A and 160B.

169. C. P. A. Review (3) II

An intensive review of the accounting principles and procedures covered in the accounting theory and accounting practice sections of the uniform C. P. A. examination prepared by the American Institute of Accountants. Prerequisites: Business 160A-160B, 161A-161B, 164A-164B, 165A-165B, 167.

173. Production Methods and Control (3) (Same course as Engineering 173)

Forecasting and estimating; authorization to manufacture; order, flow, block and load control; continuous versus intermittent production; use of drawings; tabulation of data; coordination of production with other factory departments. Not open to students with credit for Engineering 173. Prerequisite: Business 121.

174. Materials Management (3)

Functions of materials management, including planning, controlling of procurement and inventory, actual procurement, stocking and issuance of materials, accountability. Study of the scope of materials problems, organizational setting, and efficiency measurement. Prerequisite: Business 121.

175. Industrial Purchasing (3)

Policies for purchasing raw materials, fabricated parts, supplies, machinery and industrial equipment; procedures and records control; quantity and price considerations; bid analysis and award procedure; follow-up; vendor relations; legal problems; quality control; receiving and inspection; inventory control. Prerequisite: Business 121.

176. Methods and Standards (3) (Same course as Engineering 176)

Work simplification through methods improvement; operations analysis; flow charts; calculation of time standards, work and speed analysis; new developments in job timing and motion economy study; time reduction curves; work standards. Not open to students with credit for Engineering 176. Prerequisites: Business 121 and 173.

177. Quality Control (3) (Same course as Engineering 177 and Math 177)

Statistical techniques; tolerances and variants; standards; organization for inspection; inspection methods for raw materials, work in process, and finished products; control of inspection devices. Not open to students with credit for Engineering 177 or Mathematics 177. Prerequisites: Business 121 and 173 or equivalent, and either Economics 140 or Mathematics 12.

178. Problems in Industrial Management (3)

Case studies dealing with raw materials supply; purchasing; stores control; plant location and layout; power, production, quality, cost, and budgetary controls; organization; and labor relations. Prerequisites: Business 121 and 173.

E-179. Manufacturing and Tooling Administration (3) (Extension)
(Same course as Engineering E-179)

Production breakdown and relationship to manufacturing plan and tooling policy; planning, processing, and control required to activate program into production. Relationship of design engineering, tool project engineering, and tool manufacturing to production. Not open to students with credit for Engineering E-179. Prerequisite: Business 173 or permission of instructor.

180. Public Relations (3) I (Same course as Journalism 180)

Principles, methods, and objectives in the field of public relations; evaluation of the "publics" of institutions and industry; case studies of public relations problems. Prerequisites: Journalism 51A-51B, or permission of the instructor. Not open to students with credit for Journalism 180.

181. Radio and Television Station Management and Advertising (3) I
(Same course as Speech Arts 181)

Administrative and commercial methods of radio and television station operation. Advertising trends in broadcasting; audience and program measurement; publicity and promotion; traffic. Prerequisites: Speech Arts 81A and 81B, or equivalent, and permission of the instructor. Not open to students with credit for Speech Arts 181.

182. Advertising Principles (3) I, II

Advertising as a sales promotional tool in marketing activities; consumer, market and product analysis; advertising media; preparation of advertisements; measurement of advertising effectiveness; economic and legal aspects of advertising; public relations; advertising campaigns. Not open to students with credit for Business 27.

183. Problems in Public Relations (3) II (Same course as Journalism 183)

Current public relations problems of industry, public agencies, and other institutions. Prerequisite: Business 180 or Journalism 180. Not open to students with credit for Journalism 183.

184. Sales Management (3) I

Consideration of problems confronting the modern sales executive; selection, training, compensation and control of the sales force; sales analysis; sales quotas; sales costs and budgets; market and product research and analysis; coordination of personal selling with other form of sales effort. Prerequisite: Business 123.

185. Advertising Copy and Layout (2) II (Same course as Journalism 185)

Introduction to principles and techniques of copy writing; types of copy; preparation of layouts; mechanical methods employed by the artist, engraver and printer; legislation and regulations affecting advertising claims. Prerequisite: Business 182, or permission of instructor. Not open to students with credit for Journalism 185.

186. Store Management (2) I

Retail locations, buildings, layouts and fixtures; store supplies and maintenance; receiving, marking, storing, wrapping and delivering merchandise; customer service, adjustments, credit and collections; expense control. Prerequisite: Business 24, or permission of instructor.

187. Buying and Merchandising Methods (3) II

Buying for retail stores; customer demand; merchandise resources; trading techniques; terms and discounts; dollar and unit controls; pricing, turnover, and inventory control; merchandising budgets. Prerequisites: Business 24 or permission of instructor. (Formerly 187A-187B. Not open to students with credit in either of these courses.)

188. Advertising Media (2) I

A thorough coverage of advertising media. Market characteristics; rates and sources of information; evaluation of media; problems of coverage, duplication, costs and scheduling; advertising salesmanship. Prerequisite: Business 182, or permission of instructor.

189. Advertising Problems (3) I

Principles of advertising applied to the solution of actual advertising problems encountered by business firms. Estimating opportunities for effective use; promotional campaigns; selection of media, retail advertising, national advertising, advertising agencies; advertising services of publishers. Prerequisite: Business 182, or permission of instructor.

190. Objectives and Curricula in Business Education (3) II

A study of the objectives of business education and a detailed analysis of the factors involved in the construction of a business curriculum.

191-S. Typewriting Workshop (2) Summer

Recent developments in the teaching of typewriting. Opportunity for teachers to develop teaching units in typewriting in cooperation with the workshop staff.

192-S. Office Practice Workshop (2) Summer

Workshop for teachers in office practice, office machines, development of teaching materials and procedures.

193-S. Cooperative Business Work Experience (1 or 2) Summer

Provides work experience for teachers in a selected field of interest in business or industry. The experience may be concentrated or extended through the term. Individual counseling and group discussion.

196. Work Experience (2) I, II

Supervised work in cooperating stores or offices; relationship between theory and practice in specific business conditions. Prerequisite: permission of instructor.

198A-198B. Investigation and Report (1 to 3 each semester) I, II

A comprehensive and an original study of a problem connected with business under the direction of one or more members of the business staff. Prerequisites: Senior standing and permission of the instructor. 198A is a prerequisite for 198B.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

200. Readings in Current Literature in Business Education (2) I

Specialized reading in one or more phases of business education, followed by a discussion and written report of the value of each article read.

203. Office Management (2)

An intensive study of the problems of office management and their solution. The relation of records, reports, budgets and manuals to managerial control. Prerequisites: Business 14A-14B, 103A.

213. Problems in Business Education (2) II

Designed to fit the needs of individual students and their problems through the writing of research papers, of a term or individual study nature. The studies to be made will cover the principles of good teaching, trends in Business Education, current literature.

221. Basic Business Education (2)

An introduction to the content and methodology of teaching basic Business Education.

223. Problems of Distributive Business (2)

Critical analysis of distributive business problems in the light of changing economic, social and governmental conditions. Prerequisites: Business 121, 123.

233. Administration and Supervision of Business Education (2) I

Designed to provide students who hold, or who expect to hold, administrative positions in Business Education with the techniques necessary for successful executive work.

260. Advanced Problem Analysis (Accounting) (2)

The study of conditions causing various accounting problems with special emphasis upon the theory and practices involved in their solution. Prerequisites: Business 160A-160B, 161, 165.

290. Bibliography (1)

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis or Problem (3)

Guidance in the preparation of a project or thesis for the master's degree. Students have an option of a comprehensive examination or a thesis or project, with approval of the graduate office.

CHEMISTRY

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *major in arts and sciences* is offered in *chemistry* for the A.B. and for the B.S. degrees. Courses in the major are in addition to 45 units in general education courses. These curricula are outlined below.

A *teaching major in physical science and general science* is offered for the general secondary school credential and a *teaching major in general science* is offered for the junior high school credential. For statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *chemistry*. The minor consists of 15 to 22 units, six units of which must be in courses carrying upper division credit. Chemistry 1A-1B, or its equivalent, must be included in the minor.

A *teaching minor in physical science and general science* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Curricula for Chemistry Majors in Arts and Sciences

The curriculum outlined below for the B.S. degree is based upon the recommendations of the Committee for Professional Training of Chemists of the American Chemical Society. It qualifies graduates for many types of positions as chemists and provides the training required by most universities for admission to graduate work in chemistry. This department is on the approved list of the American Chemical Society. Students may also arrange a program which leads to the A.B. degree and meet the recommendations of the American Chemical Society and the requirements of most universities for admission to graduate work in chemistry.

The final curriculum outlined below for the A.B. degree is designed for students who do not intend to become professional chemists, but who desire the major in chemistry as part of a general education or in preparation for training in a related profession. By proper choice of electives, graduates can meet the requirements for admission to medical schools. The sequence of courses listed below represents the minimum technical requirement for an A.B. degree with a major in chemistry. A minor is required of chemistry majors taking the A.B. degree. A minor is not required for the B.S. degree.

Plan for B.S.Degree and Certificate of the American Chemical Society

	Units	
First year	*1st Sem.*	*2d Sem.*
Chemistry 1A-1B	5	5
Physics 4A	–	4
Mathematics 3A-3B	3	3
*Health Education 21	2	–
*Psychology 1	–	3
*Biology 1 or 3	3	–
*English 1	3	–
*P. E. activity	½	½
	16½	15½

	Units	
Second year	*1st Sem.*	*2d Sem.*
Chemistry 5A-5B	4	4
Physics 4B-4C	4	4
Mathematics 4A-4B	3	3
†*German 1, 2	3	3
*Speech Arts 3	2	–
*Social Science	–	3
*P. E. activity	½	½
	16½	17½

Third year	*1st Sem.*	*2d Sem.*
Chemistry 101A-101B	4	4
Chemistry 102A-102B	1	1
Chemistry 110A-110B	3	3
†German 8A-8B	3	3
*Social Science	3	3
*Lit., Phil., and Arts	3	–
	17	14

Fourth year	*1st Sem.*	*2d Sem.*
Chemistry 111	–	3
‡Advanced Chemistry	9	8
*Lit., Phil., and Arts	3	–
Electives	4	4
	16	15

* General education courses (nine units of chemistry, physics, and mathematics may be applied toward general education requirements).

† The B.S. degree may be obtained without the Certificate of the American Chemical Society by substituting for the German courses, six units of general education courses and six units of electives.

‡ Must include four units lecture and one unit laboratory in chemistry courses requiring three full year-courses in chemistry as prerequisites. Remainder may include courses in related subjects by approval of department.

Plan for A.B. Degree and Certificate of the American Chemical Society

	Units	
First year	*1st Sem.*	*2d Sem.*
Chemistry 1A-1B	5	5
Physics 4A	–	4
Mathematics 3A-3B	3	3
*Health Education 21	2	–
*Psychology 1	–	3
*Biology 1 or 3	3	–
*English 1	3	–
*P. E. activity	½	½
	16½	15½

	Units	
Second year	*1st Sem.*	*2d Sem.*
Chemistry 5A-5B	4	4
Physics 4B-4C	4	4
Mathematics 4A-4B	3	3
†*German 1, 2	3	3
*Speech Arts 3	2	–
*Social Science	–	3
*P. E. activity	½	½
	16½	17½

Third year	*1st Sem.*	*2d Sem.*
Chemistry 101A-101B	4	4
Chemistry 102A-102B	1	1
Chemistry 110A-110B	3	3
†German 8A-8B	3	3
*Social Science	3	3
*Lit., Phil., and Arts	3	–
	17	14

Fourth year	*1st Sem.*	*2d Sem.*
Chemistry 111	–	3
‡Chemistry electives	2	3
Minor (U. D.)	6	3
*Lit., Phil., and Arts	3	4
Electives	3	–
	14	13

* General education courses (nine units of chemistry, physics, and mathematics may be applied toward general education requirements).

† The A.B. degree may be obtained without the Certificate of the American Chemical Society by substituting for the German courses, six units of general education courses and six units of electives.

‡ Must include four units lecture and one unit laboratory from courses requiring three full year-courses in chemistry as prerequisites.

Plan for A.B. Degree for Related Professions

First year	*Units* *1st Sem.*	*Units* *2d Sem.*
Chemistry 1A-1B	5	5
*Physics 2A-2B	3	3
*Physics 3A-3B	1	1
*Mathematics 7A-7B	3	3
*English 1	3	–
*Psychology 1	–	3
*P. E. activity	½	½
	15½	15½

Second year	*Units* *1st Sem.*	*Units* *2d Sem.*
Chemistry 5A-5B	4	4
†*French or German	3	3
*Speech Arts 3	2	–
*Health Education 21	–	2
*Biology 1 or 3	3	–
*Lit., Phil., and Arts	–	3
Elective	3	3
*P. E. activity	½	½
	15½	15½

Third year	*1st Sem.*	*2d Sem.*
Chemistry 101A-101B	4	4
Chemistry 102A-102B	1	1
Chemistry 110A-110B	3	3
*Social Science	3	3
*Lit., Phil., and Arts	3	–
*Elective	3	–
Minor	–	3
	17	14

Fourth year	*1st Sem.*	*2d Sem.*
Chemistry 111	–	3
Chemistry electives	3	2
*Social Science	3	–
Minor	3	3
Electives	7	7
	16	15

* General education courses.

† Six units of general education courses may be substituted for the French or German.

Lower Division Courses

1A-1B. General Chemistry (5-5) Year, I, II

General principles of chemistry with emphasis on inorganic materials. Three lectures and two three-hour laboratory periods per week. Qualitative analysis is included in the second semester. Prerequisites: Elementary algebra and plane geometry and a passing grade in the mathematics competency examination. Recommended: High school chemistry, physics, and additional mathematics.

***2A-2B. Fundamentals of Chemistry (3-3) Year, I**

A general course including inorganic, organic, and biological chemistry for students not intending to take further work in chemistry. Two lectures and one three-hour laboratory period per week. Not open to students with credit for Chemistry 1A-1B.

5A. Elementary Quantitative Analysis (4) I

Theoretical consideration of the principles of gravimetric and volumetric analysis. Practice in standardizing reagents and analyzing samples. Two lectures, and two three-hour laboratory periods per week. Prerequisite: Chemistry 1A-1B, and facility in the use of logarithms and slide rule.

5B. Quantitative Analysis (4) II

Further work in the theory and practice of volumetric and gravimetric analyses and the study of electro analytical methods. Two lectures and two three-hour laboratory periods per week. Prerequisite: Chemistry 5A.

Upper Division Courses

101A-101B. Organic Chemistry (4-4) Year, I

The first semester lecture stresses aliphatic compounds and includes an introduction to aromatic compounds. The second semester stresses the aromatics, continues with more complex aliphatics and introduces mechanisms of organic reactions. Three lectures and one three-hour laboratory period per week. Prerequisites: Chemistry 1A-1B.

102A-102B. Organic Chemistry Laboratory (1-1) Year, I

Synthesis of typical aliphatic and aromatic compounds. Study of the theory and practice of laboratory operations. One three-hour laboratory period per week. Open only to students enrolled concurrently in Chemistry 101A-101B.

105. Avanced Quantitative Analysis (4) II

Advanced work in the theory and practiceof volumetric, gravimetric, and electro-analysis. Two lectures and two three-hour laboratory periods per week. Prerequisite: Chemistry 5A. Not open to students with credit for Chemistry 5B.

110A-110B. Physical Chemistry (3-3) Year, I

Theoretical principles of chemistry with emphasis on mathematical relations. Three lectures per week, problems and reports. Prerequisites: Physics 2A-2B, or equivalent; Math. 4B, or equivalent; Chemistry 5A-5B.

111. Physical Chemistry Laboratory (3) II

Physico-chemical apparatus and measurements, with emphasis on technical report writing. Discussion period and three three-hour laboratory periods per week. Prerequisite: Chemistry 110B, or concurrent registration with permission of the instructor.

114A. General Biochemistry (4) I

The chemistry and metabolism of carbohydrates, fats, and proteins. Three lectures and one three-hour laboratory period per week. Prerequisites: Chemistry 5A, 101A-101B or permission of the instructor. Recommended: biology or zoology.

114B. Clinical Chemistry (4) II

Lectures and laboratory work on the chemical composition of blood, urine, and body tissues. One lecture per week and three three-hour laboratory periods per week. *Open primarily* to students enrolled in the Laboratory Technician Curriculum. Prerequisite: Chemistry 114A.

118. Colloid Chemistry (2) II (Offered 1956-57 and alternate years)

The theoretical principles of colloid chemistry and the preparation, properties and practical applications of colloids. Two lectures per week. Prerequisites: Chemistry 101A, 110A and 110B.

122. Glass Blowing (1) II

Elementary training in the manipulation of glass. Prerequisite: Chemistry 1A-1B. One three-hour laboratory period per week.

127. Advanced Inorganic Chemistry (3) II (Offered 1955-56 and alternate years)

A lecture course dealing with such topics as the physical basis of the periodic system, complex inorganic compounds, and the nature of the chemical bond. Three lectures per week. Prerequisites: three years of chemistry.

130. Chemistry for Elementary Teachers (3) Summer

Practical chemistry designed to develop an understanding of basic concepts, methods and materials of chemistry used in the elementary school. Lectures, demonstrations, and field trips.

144A-144B. Principles of Chemical Engineering (3-3) Year, I (Offered 1956-57 and alternate years)

Industrial stoichiometry, flow of fluids, heat transfer, unit processes and types of industrial equipment. Three lectures per week, problems and reports, prerequisite: credit or registration in Chemistry 110A-110B.

154. Organic Qualitative Analysis (3) II

A systematic study of the identification of organic compounds and mixtures. One lecture and two three-hour laboratory periods per week. Prerequisites: Chemistry 5B or 105, 101B.

155. Instrumental Methods of Analysis (3) I

Theory and practice of modern methods of instrumental analysis, including use of pH meters, colorimeters, spectro-photometers, and other analytical devices. Discussions, reports, field trips, special individual projects. One lecture and two three-hour laboratory periods per week. Prerequisites: three year-courses in chemistry.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisites: open only to students who have shown ability to do A or B work in chemistry; permission of instructor.

Graduate Courses

200. Seminar (2 or 3) I, II

An intensive study of some phase of advanced chemistry, such as chemical kinetics; molecular structure; photochemistry, electrochemistry. May be repeated with new subject matter for additional credit.

290. Bibliography (1) I, II

Exercise in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3) I, II

Guidance in the preparation of a project or thesis for the master's degree.

COMPARATIVE LITERATURE

IN THE DIVISION OF LANGUAGES AND LITERATURE

All reading assigned for classes in comparative literature is in English translations, and no knowledge of any foreign language is required.

Major work is not offered in comparative literature; however, courses in this field may be used as part of the English major in arts and sciences. For specific information, refer to English.

Courses in comparative literature may be used as part of the teaching major in English for the general secondary and junior high school credentials with the approval of the departmental representative. For specific information, refer to the outlines of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in *comparative literature*. The minor consists of 15 to 22 units in comparative literature, nine units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in comparative literature; however, courses in this field may be used as part of the teaching minor in English for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

***52A-52B. Masterpieces of World Literature (3-3) Year, I**
(Same course as English 52A-52B)

A chronological survey from Homer to modern times. The first semester stresses the classical epic and tragedy. The second semester stresses more recent literature, including prose fiction, the drama, and the essay. Not open to students with credit for English 52A-52B.

Upper Division Courses

***101A. Modern Continental Fiction (3) II** (Same course as English 101A)

A survey of leading French, Russian, Scandinavian, Italian, and German novelists and short story writers, from Tolstoy and his associates to the present day. Not open to students with credit for English 101A.

***104A-104B. Spanish-American Literature (3-3) I**

For a description of this course, see Spanish 104A-104B, which may be taken for credit in Comparative Literature by doing the required reading in English translation.

***115. The Bible as Literature (3) I** (Same course as English 115)

A study of the narrative, poetry, and prophecy of the King James version of the Bible. Readings, reports, lectures, and discussions. Not open to students with credit for English 115.

***138. Introduction to Aesthetic Appreciation (1) I**
(Same course as Aesthetics 138)

Major forms of expressions and aesthetic experience in art, music and literature, presented by an interdepartmental staff through lectures, demonstration, and panel discussions. Not open to students with credit for Aesthetics 138.

***140A-140B. Masterpieces of French Literature (3-3) Year, I**

A cultural course designed to be given in introduction to the great French works from the Song of Roland through Cyrano de Bergerac, with emphasis on the sixteenth, seventeenth, eighteenth and nineteenth century authors. The contributions to world thinking of Rabelais, Montaigne, Moliere, Racine, Descartes, Pascal, Montesquieu, Voltaire, Rousseau, Hugo, Balzac, Flaubert, Maupassant, Zola, will be studied through lectures and outside readings.

***142. The Golden Age of German Literature (3) II**
(Same course as German 142)

Masterpieces of German literature from the eighteenth and early nineteenth centuries. Not open to students with credit for German 142.

***152A-152B. World Drama (3) Year, I** (Same course as English 152A-152B)

Study of selected tragedies and comedies from Asiatic, European, English, and American literature, with emphasis upon the human problems depicted therein and upon the timelessness of certain themes, such as those of Electra and Medea. Lectures, discussions, and reports on readings. Not open to students with credit for English 152A-152B.

159. The Rise of Romanticism in European Literature (3) II

Continental origins and growth of the romantic movement. Studies in the works of Rousseau, Goethe, Schiller, Lessing, Chateaubriand, Mme. de Stael, and others.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

ECONOMICS

IN THE DIVISION OF SOCIAL SCIENCES

Major

A *major in arts and sciences* is offered in *economics* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Economics 1A-1B; Business 14A-14B. Upper division requirements: 24 units in economics to include Economics 100A, 100B and 140. Six of the 24 units may be in related fields, selected with the approval of the departmental adviser. A minor is required.

A *teaching major in social sciences* is offered for the general secondary and junior high school credentials. For a description of these majors, refer to the credentials.

Minor

A *minor in arts and sciences* is offered in *economics*. The minor consists of 15 to 22 units in economics, nine units of which must be in courses carrying upper division credit.

A *teaching minor in economics* is offered for the general secondary school credential or as part of the *social science minor* for the special secondary, general elementary, and kindergarten-primary credentials. For a statement of requirements, refer to these credentials.

Lower Division Courses

***1A-1B. Principles of Economics (3-3) Year, I, II**

The basic principles of economics: Business organization and production; money, credit and banking, depression problems; prices, competition, and monopoly; income distribution; public finance; international trade; economic systems. Aims of course: Foundation for further study, business pursuits, and intelligent economic citizenship. Prerequisite: 1A prerequisite for 1B.

Upper Division Courses

100A. Intermediate Economic Theory (3) I

Economic theory with special reference to the theory of the firm and the industry; value and distribution. Prerequisite: Economics 1A-1B.

100B. Intermediate Economic Theory (3) II

Economic theory with special reference to national income analysis and the theory of investment. Prerequisite: Economics 1A-1B.

***102. Comparative Economic Systems (3) II**

The economic aspects of laissez-faire and regulated capitalism, cooperatives, socialism, communism, nazism, fascism. Experience in Russia, Germany, United States, Great Britain. Criteria for evaluating economic systems. The individual and government in each system. Planning in a liberal capitalistic society.

105. Economics of Consumption (3) I

An analysis of the determination of consumer demands, the relationship of the consumer to the price system, the effects of consumption and saving upon income and employment, the effects of monopoly and advertising upon consumers' welfare.

110. Economic History of Europe (3) I

A general survey of economic development from the Middle Ages to the present. Particular attention is given to the impact of the Industrial Revolution on national economics, especially on England's commerce and industry.

***111. Economic History of the United States (3) II**

A comprehensive survey of American economic development and of national legislation in the field of industry and commerce.

***115. Current Economic Problems (3) (Summer)**

Discussion of present-day economic problems of both domestic and international character.

127. Agricultural Economics (3) II

Major problems of finance, markets, conservation, overproduction, economic institutions and governmental policy, in relation to agriculture. Emphasis on regional problems.

***131. Public Finance (3) II**

Principles and practices of taxation and public expenditures. Economic effects of public spending, debts and taxation. Financing social security and other services. Fiscal policy and prosperity. Relation to inflation and deflation. Special emphasis on social problems involved.

133. Corporation Finance (3) I (Same course as Business 133)

The corporate form of organization; instruments of long-time finance; methods of raising capital, efficient financial management, financing of organizations, and government control. Not open to students with credit for Business 133.

135. Money and Banking (3) II

The elements of monetary theory. History and principles of banking with special reference to the banking system of the United States.

138. Urban Land Economics (3) I

Analysis of major influences affecting city location and growth; role of private and governmental institutions in influencing residential and other uses of land; major considerations in appraising, managing, financing, marketing, developing and taxation of urban property. Discussion of San Diego problems.

139. Real Estate Principles and Practices (3) II
(Same course as Business 139)

Functions and regulation of the real estate market; transfers of property, including escrows, mortgages, deeds, title insurance; appraisal techniques; financing methods; leases; subdivision development; property management. Not open to students with credit for Business 139.

140. Statistical Methods (3) I, II

Statistical method in the social sciences. Tabular and graphical presentation. Frequency and time series analysis. Index numbers and correlation techniques. Prerequisite: Mathematics A-B, and C, or equivalent. Not open to students with credit for Sociology 103, Psychology 104A, 104B.

142. Business Cycles (3) I

Fundamental factors in business cycles are analyzed and cycle theories are examined. Study of current business conditions begins early in the course and develops into practical application of forecasting methods to both business and other data. Prerequisite: Economics 1A-1B.

150. Labor Problems (3) I

A study of labor organizations and their policies, wages, strikes, unemployment, social insurance, child labor, labor legislation, plans for industrial peace, and other labor problems.

151. Collective Bargaining and Labor Relations (3) II

Structures of labor relations; management and union problems; public policy and collective bargaining; conditions of successful collective bargaining.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

***170. Government and Business (3) I, II**

General survey of governmental activities affecting business; the state as an entrepreneur and manager; governmental assistance to business; governmental regulation of business in its historical, legal and economic aspects, including recent developments in the United States and abroad; proposed policies.

171. Transportation (3) I

The development of railway transportation; railroad financing; rates and rate making; governmental regulation; government operation of railroads during the war; recent development of motor and air transportation. Prerequisite: Economics 1A-1B.

172. Public Utilities (3) II (Not offered 1955-56)

The growth of public utilities in the United States; economics of public utility rates; valuation; public regulation and its legal basis; public ownership; transportation problems. Prerequisites: Economics 1A-1B.

185. Social Insurance (3) I

Old age pensions, health insurance, unemployment insurance, and Social Security Act. Strength and weakness of existing systems.

190. International Economics—Principles (3) I

National welfare and foreign trade. Principle of comparative costs, comparative advantages in various nations. Foreign exchange and the balance of payments, financing foreign trade. Regulations over trade and obstructing factors. Techniques of exporting and importing. Doctrines of international trade.

195. International Economics—Problems (3) II

Important aspects of international cooperation and conflict in the economic sphere, conditions essential to future cooperation. The quest for foreign markets, raw materials, investment opportunities and population outlets. Commercial policies, international economic conferences and organizations. Colonial rivalries and postwar problems.

198. Investigation and Report (3) I, II

Designed to stimulate independent study and investigation; to furnish guidance in the collection, organization, and presentation of factual material; to improve the technique of term reports. For economics majors only.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

200A-200B. Seminar in the Development of Economic Thought (2-2) Year, I, II

A critical study of the development of economic thought and of contemporary economic thought, in order to provide a clearer understanding of major economic problems of the day.

290. Bibliography (1)

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

Guidance in the preparation of a project or thesis for the master's degree.

EDUCATION

IN THE DIVISION OF EDUCATION

Major

A *teaching major in education* is offered for the general elementary and kindergarten-primary credentials. For a statement of requirements, refer to these credentials. A major in education is not offered in arts and sciences.

Minor

A *minor in arts and sciences* is offered in *education.* This minor consists of 15 to 22 upper division units in education selected with approval of the chairman of the Department of Education.

A *teaching minor* is not offered in education.

Students will be admitted to education courses only when they are admitted to teacher education or have permission from the chairman of the Department of Education. Experienced teachers may take education courses for which they have the prerequisites. Students who take a minor in education must have been regularly admitted to teacher education. (See Admission to Teacher Education.)

Lower Division Courses

A. Review of Arithmetic (0) I, II

H. Review of Handwriting (0) I, II

R. Review of Reading (0) I, II

S. Review of Spelling (0) I, II

Noncredit courses designed to increase competence in the skill subjects. For students who do not qualify on the respective sections of the Fundamentals Test required of all applicants to teacher education.

Upper Division Courses

100B. Methods and Materials of Instruction and Audio-visual Aids
Major (2), Minor (2)

Professional courses in specific teaching fields taken just prior to or concurrently with the first directed teaching assignment. Each course emphasizes the application of best practice with reference to each subject area named.

Subject fields for sections in 100B are as follows:

Offered in the Fall Semester

100B-A.—Methods in Art
100B-E.—Methods in English
100B-HE.—Methods in Home Economics
100B-IA.—Methods in Industrial Arts
100B-L.—Methods in Romance Language
100B-Ma.—Methods in Mathematics
100B-Mu.—Methods in Music
100B-PE.—Methods in Phys. Ed. (Men)
100B-P.Sc.—Methods in Physical Science
100B-SA.—Methods in Speech Arts
100B-S.Sc.—Methods in Social Science

Offered in the Spring Semester

100B-E.—Methods in English
100B-IA.—Methods in Industrial Arts
100B-L.Sc.—Methods in Life Science
100B-PE.—Methods in Phys. Ed. (Women)
100B-S.Sc.—Methods in Social Science

Offered Irregularly

100B-H.Ed.—Methods in Health Education
100B-B.—Methods in Accounting
100B-Me.—Methods in Merchandising
100B-S.—Methods in Shorthand
100B-SS.—Methods in Secretarial Subjects
100B-T.—Methods in Typing

102A. Measurement and Evaluation in Elementary Education (3) I, II Summer

The use of intelligence and achievement tests in the diagnosis and improvement of learning; construction of objective examinations; problems of evaluation in education; the elements of statistical techniques. Should follow 102B for elementary candidates.

102B. Child Growth and Development (3) I, II Summer

Study of the mental, emotional, social, and physical development during childhood and early adolescence. Directed observation required. Should precede 102A for elementary candidates.

102C. Growth and Development of the Adolescent (3) Irregular

Study of adolescent physiological, psychological, social, and emotional development, including principles of mental hygiene and guidance. Field work with adolescent groups in the community is required.

102D. Measurement and Evaluation in Secondary Education (2) Irregular

Problems of evaluation in secondary education, construction of examinations, the elements of statistics, the selection and interpretation of standardized measures, and appraisal of audio-visual instructional materials. Field work required. Prerequisite: Education 130.

105A. Introduction to Psychological Testing (3) I, II
(Same course as Psychology 105A)

The basic principles of testing. The selection and critical evaluation of group tests of intelligence, personality, aptitude, interest and achievement. Prerequisite: One of the following courses: Psychology 5, 11; Education 102A, 102D. Not open for credit to students with credit for Psychology 105A.

115A. History and Philosophy of Education (2) I, II Summer

Historical backgrounds and underlying philosophies upon which the public school system has been established. Emphasis on the meaning of education, educational aims and values, and democracy and education. Prerequisite: Senior standing or the equivalent; minimum of 12 units of education.

115B. Secondary Education (3) Irregular

An introduction to understanding the development of secondary education and its present status as a social institution.

116A. Directed Teaching (2-12) I, II

Systematic observation, participation and teaching under supervision in the campus elementary school, the affiliated elementary, junior high and senior high schools. During each semester of student teaching a weekly conference period is required as indicated in the time schedule. Prerequisites: Admission to teacher education; education program approved by Coordinator of Elementary or Secondary Education. Any grade below C is unacceptable for a credential.

116B. Directed Internship (1-6) I, II

Extensive daily participation or teaching in public schools in preparation for a second credential when Directed Teaching has been taken for a prerequisite credential. Application should be made during the preceding semester. Preregistration required.

117A. Elementary Music Education (2) I, II

Objectives of music teaching; study of the child voice; and organization of song material by grades. Procedure in presenting rote songs, ear training, elementary notation, music reading, and part singing. Prerequisite: Music 7A, or the equivalent. Not open to students who have had Music 7B.

117B. Methods in Instrumental Music (2) I or II

The theory of organizing and conducting school bands and orchestras, and the selection of materials. Provides practical experience in conducting a children's orchestra and teaching sectional groups. Systematic planning for pupils of various ages and abilities.

117C. Music Literature for Elementary Teaching (3) Summer

Music literature for singing, expressive movement, listening, playing instruments, and creative activities, stressing integration of these activities with the total classroom program. Prerequisites: Music 7A and teaching experience; or permission of instructor.

119. Art in the Elementary School (2) I, II

Discussion of the elements and principles of art and their place in the art expression and appreciation of the elementary school child. Laboratory experience in elementary school problems. Not open to students taking the elementary credential. Prerequisite: Art 6A.

122. Social Studies in Elementary Education (2) I, II Summer

The purpose, scope, organization and development of instructional procedures in the social studies in the elementary school. Development of curriculum units and the analysis of teaching materials.

123. Science in Elementary Education (3) Irregular

The construction and use of science equipment, the effective use of audio-visual aids, the use of environmental resources, and the use of texts and supplementary materials. Relations to social science in the elementary curriculum are also developed.

125. Curriculum in Elementary Education (3) Irregular

Emphasis upon the selection and development of content, teaching methods, and materials as they relate to social needs; evaluation procedures; psychological principles, and the nature of the learner.

126. Literature in Elementary Education (3) Irregular

Criteria for the selection of children's literature, children's reading interests, the development of units of instruction in the social studies, the use of the verse choir, dramatic readings and similar procedures, and the use of the library.

129. Arithmetic in Elementary Education (2) I, II Summer

For teachers of arithmetic in the elementary and junior high school. Emphasis is placed upon the understanding of the systems of notation and language techniques. Opportunity will be given for the development of instructional materials and procedures.

129C. Conference on the Teaching of Mathematics (1) Summer

Lectures, discussions, and demonstrations on problems in teaching of mathematics in the elementary and secondary schools. Designed for teachers, supervisors, and administrators interested in current developments in this area. Course may be taken three times for credit.

130. Educational Psychology (2) I, II Summer
(Same course as Psychology 130)

To develop understanding of the applications of psychological research for effective classroom teaching. Observation and field work required. Prerequisite: Psychology 1. Not open to students with credit for Psychology 130.

134. Behavior Problems in Early Childhood (1) Summer

Lectures and related readings on the typical behavior problems of two to twelve year olds, for teachers and parents.

136. Reading in Elementary Education (3) I, II Summer

Scientifically developed procedures for determining reading readiness, beginning reading, independence in word recognition, vocabulary development, word analysis, standards of attainment, types of reading programs, and the selection, preparation and use of reading materials.

138. Workshop in Family Life Education (3) Summer

Series of lectures, discussions, and laboratory sessions devoted to furthering understanding of the problems of family life education. The student will have an opportunity to develop units suitable for a program of family life education. Community agencies will participate in the workshop.

143. Adult Education (3) Irregular

Principles and procedures of providing learning experiences for adults; the nature of adult education and the psychology of leadership; evaluation of programs.

144. Reading Difficulties (3) I Summer

Reading difficulties, their causes, prevention, and correction. Remedial practices in reading useful to the classroom teacher, school counselor, and reading specialist. Prerequisites: Education 102B, or equivalent, and Education 136 or 154; or permission of instructor.

145A. Organization and Administration of Music Education (2) II

Administration of an instrumental music program: purchase, care, depreciation of instruments and equipment; developing interest; ethics; schedule-making; operation and maintenance of music library; personnel and equipment records; the achievement point system; the marching band show; rehearsal procedure.

146. Education Practicum (Kindergarten-Primary) (4) I, II Summer

A continuation of Education 148 and will accompany Education 116 in the kindergarten. A study of the theory of early childhood education providing experience with children of nursery school and kindergarten ages. Prerequisites: Education 147, 148.

146B. Interpretation of Early Childhood Behavior (3) Summer

For kindergarten-primary teachers treating the analysis and interpretation of early childhood behavior. Emphasis on understanding and interpreting the causative factors in typical behavior of children to parents, social workers, teachers, and others concerned with the guidance of kindergarten-primary children.

147. Elementary Education Practicum (13) I, II

Required of all students who expect to receive a credential which will qualify them to teach in the elementary school. Registration is strictly limited to those who have been approved by the Committee on Admission to Teacher Education.

This practicum includes both classroom observation and participation as well as the study of the principles of education. The course includes Reading, Language Arts, Arithmetic, Music, Art, Curriculum, and Participation. Audio-Visual-Radio Instruction is integrated with the course.

It is strongly recommended that Education 102B be taken concurrently.

148. Elementary Education Practicum (7) I, II

This course is a continuation of Education 147, and is required of all students who are candidates for the elementary teaching credentials. An extended analysis is made of the psychology of education in various fields and application is made through directed teaching experiences. The course includes Social Studies; Elementary Science; Curriculum in Elementary Education; Education 116A, Directed Teaching. Prerequisite: Education 147.

It is recommended that Education 102A be taken concurrently.

149A. Laboratory in Elementary Education (3) Summer

A general course in observation and theory, including a study of arithmetic, reading, language, music, science, social studies, art, spelling. Students in this course will observe in the summer demonstration school and discuss with the staff the teaching procedures.

149C. Laboratory in Rural Education (6) Summer

Observation in a one-room multigraded summer demonstration school. Students will observe demonstrations, discuss procedures with the staff, and prepare material for their own schools.

149D. Workshop in Elementary Education (3 or 6) Summer

To meet the needs of individual or groups of teachers who desire to study selected problems in elementary education. The observation of classroom teaching will be provided for members in attendance. Interested persons should correspond with the Coordinator of Elementary Education, San Diego State College.

154. Reading in Secondary Education (3) II

The nature of the reading program, development of techniques and skills, vocabulary development, reading in the content fields, the differentiated attack, measurement, diagnosis, and remediation.

155. Guidance in Elementary Education (3) I, II Summer

A study of the basic principles of guidance and their function in the educational process as applied in the elementary school.

156. Guidance Conference (1) Summer

A series of lecture and discussion sessions centering on current problems in counseling and guidance. Designed to serve the needs of any person desiring to keep informed of developments in this area. Admission upon permission of the director of this conference. Course may be taken three times for credit.

158. Supervision of Child Welfare and Attendance (3) Summer

Content includes laws relating to children, guidance principles, social case work, agency relationships, conference techniques, home visitation methods, employment supervision, attendance work, child accounting, familiarity with testing techniques.

161. Legal Aspects of Education (3) Irregular

A study of the school law of California, important court decisions, rulings of the California State Superintendent of Public Instruction and the Attorney General, historical and current trends, and comparative data from throughout the United States.

166. Honors Course (Credit to be arranged) I, II Refer to the Honors Program.

171. Audio-Visual Conference (1) Summer

A series of lectures, discussions and demonstrations, centering on problems in the use of audio-visual instructional materials. Designed for teachers, administrators, audio-visual representatives, and others interested in current developments in this area. Course may be taken three times for credit. Does not fulfill credential requirement.

173. Television and Radio in the Classroom (3) Summer

The use of television and radio programs as instructional aids in the classroom. Prerequisites: Education 174 or equivalent, and teaching experience.

174. Audio-Visual Instruction: Materials and Techniques (3) I, II Summer

A study of audio-visual-radio aids as they affect learning. Analysis and development of materials of instruction and their presentation; operation of equipment.

174BE. Audio-Visual Business Education (3) Summer

A review of the skills and knowledges necessary to use audio-visual aids, followed by intensive study and research in the literature available and by practice with the materials and techniques that apply to business education.

175. Creating Audio-Visual Materials for Classroom Use (3) Irregular

Practice in the creation and evaluation of instructional materials, such as 35 mm. film strips, 16 mm. films, scripts, recordings and other audio-visual materials. Prerequisite: Education 174, or equivalent.

176. Problems of Speech Correction and Articulation (3) II
(Same course as Speech Arts 176)

Analysis and discussion of the major articulatory problems as encountered in public school work, particularly in California. Required of all students for the speech correction credential. Not open to students with credit for Speech Arts 176.

177. The Teaching of Lip Reading (2) Summer
(Same course as Speech Arts 177)

History, theory and methods of lip reading. Aids for the classroom teacher, program and materials of instruction for the specialized teacher. Opportunities for practice teaching are offered. Not open to students with credit for Speech Arts 177.

178. Problems of the Hard of Hearing (3) Summer

The adjustment of the hard-of-hearing group with emphasis on the public school child. State and county hearing programs; audiometric techniques with practice; educational, classroom, and social problems. Meets audiometric certification requirement.

179A-179B. Nervous Speech Disorders (3-3) Year, I
(Same course as Speech Arts 179A-179B)

Classification and study of speech defects and disorders. Training in corrective technique for public schools; observation. Required for the Special Secondary Credential in Correction of Speech Defects. Not open to students with credit for Speech Arts 179A-179B.

181. Exceptional Children (3) I or II

Characteristics and adjustment problems of mental, physical, and emotional deviates; emphasis upon the mentally handicapped.

182. Curriculum and Methods for Mentally Retarded Children (3) II or Summer

Selection, organization and presentation of curricular materials for mentally retarded children.

183. Practicum for Teaching Mentally Retarded Children (3) Summer

Analysis and interpretation of educational procedures utilized with the retarded learner. A demonstration class will be available for observation. Education 182 must be taken prior to, or concurrently with, Education 183.

184A. The Secondary School (4) I, II

Orientation toward understanding teaching as a profession, and the public school as a social institution. Overview of history, aims, scope, function, outcomes, principles, and problems of American elementary and secondary education. Field work, including audio-visual experiences, required.

184B. Development and Learning (4) I, II

To acquaint the student in secondary education with the nature of development and the learning process, with consideration of mental hygiene, guidance and the place of audio-visual aids. Field work required. Prerequisite: Education 184A.

184C. The Teaching Process (4) I, II

To develop teacher competency at the secondary level in professional and community relationships, and in planning teaching, and evaluating learning activities (with emphasis on the use of audio-visual resources and the development of class morale). Field work required. Prerequisites: Education 184B and consent of the instructor.

185. Workshop for Teaching the Mentally Retarded (3-6) Summer

Curriculum and methods of teaching, integrated with a demonstration class. Particular emphasis on the arts and crafts program. Opportunities will be provided for teachers to develop materials of instruction. To meet California credential requirements in the areas described. Not open to students with credit in both Education 182 and 193.

186. Vision Testing and Hygiene (2) Irregular

Measurement of visual acuity including an analysis of vision tests, hygiene and physiology of the eye, conservation of sight, and classroom adaptation for the visually handicapped.

187A-187B-187C. Child Study Laboratory (2-2-2) I, II

Development of background and procedures for child study and their application to field situations. Field work required. For teachers in service. 187A is prerequisite for 187B, and 187B is prerequisite for 187C.

188. Techniques of Pupil Appraisal (3) I, II or Summer

A study of, and practice in, techniques of collecting, assembling, and interpreting data about individual pupils for guidance purposes. Field work required. Prerequisite: Education 102D or 102A, or consent of instructor. Not open to students who have credit for Psychology 105A or Education 105A.

189. Workshop in Secondary Education (3 or 6) Summer

Designed to meet the needs of individuals or groups of teachers who wish to develop or continue to study of some problem with the consultation of the college staff and the San Diego County Curriculum Staff.

191. Driver Education (2) Summer

A workshop type course designed to prepare teachers of the course in high school. Enrollment by permission of the instructor.

192-S. Advanced Driver Education (2) Summer

An advanced workshop dealing with special problems in driver education, including legal and sociological aspects, administration, and special training techniques. Prerequisite: Education 191, or equivalent.

199. Special Study (1-6) I, II, and Summer

Individual study. Six units maximum credit. Prerequisites: open only to senior and graduate students in education who have shown ability to work independently; permission of instructor.

Graduate Courses

For general requirements for admission to graduate courses, see statement on Admission to Graduate Status in section on Admission and Registration. In addition to these general requirements, 12 units of professional education are prerequisite for enrollment in all graduate courses.

Sociological Foundations

205. History of Education (3) Summer

Advanced study of the history of education with emphasis on educational practices as related to present day problems. Prerequisite: Education 115A or equivalent.

206. Philosophy of Education (3) Summer

Advanced study of philosophical backgrounds of educational thought; a study of comparative philosophies, and an analysis of selected current trends and problems. Prerequisite: Education 115A or equivalent.

207. Educational Sociology (3) Summer

A study of the social, economic, political and moral setting in which present day American education functions. Prerequisite: Education 115A, or equivalent, teaching experience.

208. Workshop in Community Influences on Learning and Curriculum Planning (3 or 6) Summer

Advanced study of community influences on learning and child growth and development, and of group techniques; implications for curriculum planning. Provides opportunity for work on individual problems of the participants. Prerequisite: teaching experience.

Educational Psychology

220. Advanced Educational Psychology (3) I, II, Summer

Advanced study of the research and its application to learning and human growth. Prerequisite: Educational Psych. 130, or equivalent, teaching experience.

221. Seminar in Educational Measurement (3) Summer

Problems in educational testing. Emphasis upon construction, administration, and validation of teacher-made tests. Prerequisite, one of the following: Education 102A, or 102D, or 105A, or 188, or equivalent.

230. Guidance Problems in Secondary Education (3) I, II, Summer

Individual and group study of the theory and practice of guidance with emphasis upon practical problems of the members of the class.

232. Problems in Vocational Guidance (3) I, Summer

To prepare teachers for vocational guidance in the secondary schools. Includes occupational information, vocational aptitude measurement, and educational guidance. Prerequisite: Education 230, or equivalent.

233. Guidance Counseling Techniques (3) I, II
(Same course as Psychology 233)

Designed for school counselors. To stress the understandings and procedures necessary for effective interviewing. Prerequisite: Education 230, or equivalent. Not open to students with credit for Psychology 233.

234. Administration of Pupil Personnel Services (3) I, Summer

The organization and administration of school guidance services, including the use of community resources and a study of laws relating to children and child welfare. Prerequisite: Education 230 or equivalent.

237. Research in Guidance Problems (1-3) Summer

Individual study by graduate students who have demonstrated exceptional ability and a need for such work. Admission by permission of the Coordinator of Secondary Education and instructor.

238. Field Work in School Guidance (3) II

Application of the principles and procedures in testing, counseling, and related personnel work in the public school. Weekly seminar sessions with college and cooperating staff. Prerequisite: permission of instructor and 12 units in guidance and related areas.

239. Workshop in Pupil Personnel Services (3) Summer

Application of principles and procedures to specific situations for improvement of pupil personnel services. Individual problems emphasized. Prerequisite: teaching experience and permission of director of workshop.

Elementary Education

240. Curriculum Construction and Evaluation in Elementary Education (3) I, Summer

Advanced study of the research in curriculum development, construction, and evaluation. Prerequisites: 12 units of work in elementary education and consent of the instructor.

241. Problems in the Teaching of Arithmetic (3) Summer

A study of research and practice in the methods of teaching and in the curriculum of elementary and junior high school arithmetic. Prerequisite: Education 129 or equivalent.

242. Problems in the Teaching of Reading (3) Summer

Advanced study of trends in reading instructions. Topics include developmental sequences in reading skills and abilities, reading in the content fields, individual differences, and interests. Students will develop individual projects or problems. Prerequisites: Education 136 and 144 or equivalents.

243. Seminar in Social Studies in Elementary Education (3) Irregular

Advanced study of problems in teaching social studies in the elementary school with emphasis on the study of the scientific research in the field. Prerequisite: permission of instructor.

244. Seminar in Language Arts in Elementary Education (3) Irregular

Advanced study of problems in teaching language arts in the elementary school, including spelling, literature and written and oral communication. Emphasis will be on the study of scientific research in the field. Prerequisite: permission of instructor.

245. Seminar in Elementary Education (3) Irregular

A study of the methodology of research with particular reference to the basic research in the psychology and teaching of the elementary school subjects. Prerequisites: 12 units in elementary education and permission of the instructor.

246. Advanced Diagnosis in Reading (3) II, Summer

Principles and techniques of individual and group diagnosis of reading difficulties. Experience in administration and interpretation of individual and group instruments of diagnosis. Prerequisites: Psychology 105B and Education 144, or permission of instructor.

Secondary Education

250. Curricular Problems in Secondary Education (3) I, II, Summer

Present status and development of the secondary school curriculum with emphasis upon curriculum construction and curriculum evaluation. Opportunities provided for study of problems submitted by students. Prerequisites: 12 units in secondary education and consent of the instructor.

252. General Education in the Secondary School (3) Summer

A course designed for teachers in service. A study of the function and implementation of general education in the secondary school. Prerequisites: 12 units in secondary education and permission of the instructor.

254. Advanced Problems in Secondary School Instruction (3) II, Summer

An analysis of the scientific research and philosophical principles in secondary school instruction. Prerequisites: teaching experience and permission of instructor.

256. Recent Trends in Secondary Curriculum (3) Irregular

Current practices and trends in secondary schools. Extensive individual work on related problems of interest to members of the class. Prerequisites: 12 units in secondary education and permission of the instructor.

257. Workshop in Intercultural Education (4) Summer

A cooperative workshop sponsored by the college and the San Diego City Schools to study trends in intercultural education in American schools, including units, curricular and instructional materials and techniques. Enrollment only by application to the Chairman of the Division of Education.

258. Research in Curricular Problems (1-3) Irregular

Individual study by graduate students who have demonstrated exceptional ability and a need for such work. Admission by permission of the Coordinator of Secondary Education and instructor.

School Administration and Supervision

260. Federal, State, County and City School Organization and Administration (3) I, Summer

A study of federal, state, county and city school organization and administration including the interrelationships of the four levels. Prerequisite: possession of a valid teaching credential.

262. The Organization and Administration of Elementary Schools (3) I, Summer

A study of the problems of personnel, local finance, curriculum, school plant and community relations of elementary schools. Field project required. Prerequisites: valid General Elementary Credential, teaching experience, Education 155, 240, 260, and 270 and admission to program of Administrative Studies.

263. The Organization and Administration of Secondary Schools (3) I, Summer

A study of the problems of personnel, local finance, curriculum, school plant, transportation and community relations of secondary schools. Field project required. Prerequisites: possession of a valid General Secondary Credential, teaching experience, Education 230, 250, 260 and 270 and admission to program of Administrative Studies.

264. Elementary School Supervision (3) II, Summer

Principles and practices of supervision and methods of evaluating instruction and the curriculum in elementary education. Field project required. Prerequisites: General Elementary Credential, teaching experience, Education 155, 240, 260 and 270 and admission to program of Administrative Studies.

265. Secondary School Supervision (3) II, Summer

Principles and practices of supervision, curriculum and teaching methods in secondary education. Field project required. Prerequisites: General Secondary Credential, teaching experience, Education 230, 250, 260 and 270 and admission to program of Administrative Studies.

266. Field Work in Elementary School Administration and Supervision (2) II

Study of the administration and supervision of an elementary school with the cooperation of a local school administrator and under the supervision of a college staff member. Field projects required. Prerequisites: admission to the program of Administrative Studies, completion concurrently of all other requirements for the Elementary Administration or Supervision Credential, permission of local school administrator and instructor.

267. Field Work in Secondary School Administration and Supervision (2) II

Study of the administration and supervision of a secondary school with the cooperation of a local school administrator and under the supervision of a college staff member. Field projects required. Prerequisites: admission to the program of Administrative Studies, completion concurrently of all other requirements for the Secondary Administration or Supervision Credential, and permission of local school administrator and instructor.

268. Seminar in School Administration (3) Summer

An intensive study of research on selected problems in the field of school administration. Provision will be made for individual work on special topics of interest to students. Prerequisites: permission of instructor.

270. School Finance, Business Administration, and Law (3) II, Summer

A study of public school finance at federal, state and local levels; an analysis of the business administration of schools and a study of school law as it applies to finance, administration and other aspects of school administration. Prerequisites: possession of a valid teaching credential or permission of instructor.

271. Supervision of Student Teaching (2) II

Study of selection, orientation, induction, counseling and evaluation of credential candidates and student teachers; and helping student teachers plan lessons, conduct classroom learning, analyze pupils' difficulties and achievement. Open to experienced teachers interested in the teacher education program.

274A. Utilizing Audio-Visual Materials in the Classroom (3) I, Summer

A critical analysis of research evaluating the use of visual, auditory, and other sensory materials in education. Prerequisite: Education 174, or equivalent.

275. Administering the Use of Audio-Visual Materials (3) II, Summer

Organizing, supervising, and coordinating audio-visual centers as an integral part of educational systems. Prerequisite: Education 174, or by permission of the instructor.

278. Educational Leadership (3) I, Summer

An analysis of the factors and practice in procedures of group and individual leadership in four areas: (a) the community; (b) the teaching staff; (c) the student personnel; (d) the professional field of educational administration and supervision. Prerequisite: valid teaching credential or permission of instructor.

Procedures of Investigation

290. Procedures of Investigation and Report (2-3) I, II, Summer

Emphasizes procedures in selecting and writing a project or thesis. Methods of investigation and reporting data. Extensive survey of an area of professional literature to analyze techniques and style. Separate sections for elementary and secondary levels.

295A-295B. Seminar (3-3) I, II, Summer

An intensive study in selected areas of education culminating in a written project. Limited to students following Plan B for the Master of Arts degree in Education. Prerequisite: satisfactory score on the Graduate Comprehensive Examination in Education.

298. Special Study (1-6) I, II, Summer

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3) I, II, Summer

Guidance in the preparation of a project or thesis for the master's degree.

Student Teaching and Internship

316A. Directed Teaching (3-7) I, II

Systematic observation, participation and teaching under supervision in the campus elementary school, the affiliated elementary, junior high and senior high schools. During each semester of student teaching a weekly conference period is required as indicated in the time schedule. Prerequisites: Admission to teacher education; education program approved by the Coordinator of Elementary or Secondary Education. Any grade below C is unacceptable for a credential.

316B. Directed Internship (2-6) I, II

Extensive daily participation or teaching in public schools in preparation for a second credential when Directed Teaching has been taken for a prerequisite credential. Application should be made during the preceding semester. Preregistration required.

ENGINEERING

IN THE DIVISION OF PHYSICAL SCIENCES

The engineering program is designed to give a student a sound training in the fundamentals of engineering with a minimum of specialization, and at the same time provide the broad training and experiences which constitute a liberal education. The program leads to the degree of Bachelor of Science in Engineering.

The program is intended to provide the essential training in those functions which are within the scope of a four-year program. These, specifically, are the production, operation, maintenance, service, sales, and management functions of engineering. Curricula and individual courses are designed to emphasize these functions. Students who desire training for work in such fields as research, design, and development should plan to complete their education at a university where these fields are emphasized.

Major

A major in arts and sciences is offered in *engineering* for the B.S. degree. Courses in the major are in addition to 45 units of general education courses. Nine units of chemistry, physics, and mathematics may be applied toward general education requirements. Lower division requirements for all engineering students are tabulated under Engineering Curricula below. Upper division requirements: A minimum of 36 upper division units. Specific requirements for the general engineering program and for the programs providing limited specialization are listed under Engineering Curricula below. Students electing limited specialization in Industrial Engineering should also refer to the curriculum in Engineering Management described in this section of the catalog under Business. A minor is not required of engineering majors.

A teaching major is not offered in engineering.

Students normally will submit master plans for their upper division programs, for departmental approval, at the beginning of their junior year.

Minor

A *minor in arts and sciences* is offered in engineering. The minor consists of 15 to 22 units in engineering, nine units of which must be in courses carrying upper division credit. The courses should follow a logical sequence approved by the departmental representative.

A *teaching minor* is not offered in engineering.

ENGINEERING CURRICULA

The curricula below specify the requirements for the general engineering program and for the indicated options. They include recommended electives to fulfill the requirements of general education.

General Education

In the outline of requirements listed below, courses in general education are prefixed with an asterisk (*). Nine additional units in chemistry, physics and mathematics may be applied toward general education requirements. All students should remove U. S. history, Constitution, and California state and local government requirements by examination or by taking appropriate social sciences courses.

Lower Division Requirements for All Engineering Students

Freshman Year	Units 1st Sem.	Units 2d Sem.	Sophomore Year	Units 1st Sem.	Units 2d Sem.
*P.E. activities	½	½	*P.E. activities	½	½
Math. 3A-3B	3	3	Math. 4A-4B	3	3
Physics 4A	–	4	Physics 4B-4C	4	4
Chem. 1A-1B	5	5	*Econ. 1A-1B	3	3
Engr. A	–	1	Engr. 21 and 23	3	2
*English 1	3	–	Restricted electives	3	3–4
*Speech Arts 3	2	–	General, Aero., Elect., and Mech.: Engr. 1A, 22		
*Biology 1	–	3	Civil: Engr. 1A-1B		
*Psychology 1	3	–	Electron.: *Lit. or Phil. and elective		
	16½	16½	Ind. Engr.: *Hist. 17A-17B or Pol. Sci. 71A-71B		
				16½	15½–16½

* General education courses.

Upper Division Requirements for Curriculum in General Engineering

Junior Year	Units 1st Sem.	Units 2d Sem.	Senior Year	Units 1st Sem.	Units 2d Sem.
Engr. 100A-100B	3	3	Engr. 127, 105	3	3
Engr. 101A-101B	2	2	Engr. 129, 106	2	2
Engr. 102A-102B	3	3	Engr. 199, 198	2	2
Engr. 140	–	3	Engr. 180	–	3
Engr. 141	–	2	Econ. 170	3	–
*Health Educ. 21	2	–	*Lit. or Phil.	3	–
*Ind. Arts 5	3	–	†Electives	3	6
Math. 118A	3	–		16	16
*Soc. Sci. elective	–	3			
	16	16			

* General education courses.
† Electives to include two additional upper division engineering courses and one additional course in industrial arts. Courses to be approved by the Department of Engineering.

Upper Division Requirements for Curricula Providing Limited Specialization

Junior Year	Units 1st Sem.	Units 2d Sem.	Senior year	Units 1st Sem.	Units 2d Sem.
Engr. 100A-100B	3	3	†Econ. 170	3	–
Engr. 102A-102B	3	3	Engr. 105	–	3
‡Engr. 127, 140	3	3	Engr. 180	–	3
	9	9	Engr. 198	–	2
				3	8

Additional Requirements for Various Fields of Limited Specialization

Aeronautical Engineering: Junior year, Engineering 101A-101B, 141, Mathematics 118A, * Health Education 21, * social science elective. Senior year, Engineering 106, 122, 129, 142A, 156, * Industrial Arts 5, * literature or philosophy.

Civil Engineering: Junior year, Engineering 130, 135, 141, Mathematics 118A, * Health Education 21, * social science elective. Senior year, Engineering 106, 142A-142B, * Industrial Arts 5, * literature or philosophy.

Electrical Engineering: Junior year, Engineering 101A-101B, 103, 107, 141, Mathematics 118A, * Industrial Arts 5. Senior year, Engineering 125, 126, 129, * Health Education 21, * social science elective, * literature or philosophy.

Electronics Engineering: Junior year, Engineering 103, 104A, 107, 110, 123, Mathematics 118A, *social science elective. Senior year, Engineering 101A-101B, 104B, 124, 150, *Health Education 21, *Industrial Arts 5.

Industrial Engineering: Junior year, Engineering 173, 176, Business 18A, *Health Education 21, and three units of elective in general education courses. Senior year, Business 14A-14B, 153, Engineering 177, Economics 140, *literature or philosophy, *Industrial Arts 5.

Mechanical Engineering: Junior year, Engineering 101A-101B, 141, Mathematics 118A, * Health Education 21, * social science elective. Senior year, Engineering 106, 122, 128, 129, 145, * Industrial Arts 5, * literature or philosophy.

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* General education courses.

† Not required in Industrial Engineering option. See Engineering Management major in the section of the catalog under Business.

‡ Electronics engineers take Engineering 127 first semester of the senior year.

Lower Division Courses

A. Introduction to Engineering (1) I, II

A survey of the fields of engineering, designed to familiarize the student with the nature, the requirements, the responsibilities, and the opportunities of the profession. Required of all freshman engineering students.

1A-1B. Plane Surveying (3-3) Year, I

Two lectures and one three-hour field period per week. Semester I: Use, care and adjustment of surveying equipment. Introduction to standard procedures and techniques. Prerequisites: Engineering 2, or equivalent, Math. D, and sophomore standing. Semester II: Computations and map making; land, topographic, and city surveying. Prerequisite: Engr. 1A.

2. Mechanical Drawing (3) I, II

Freehand lettering, use and care of drafting equipment, simple orthographic projection, introduction to problems of dimensioning. Open to students lacking credit for a year course in senior high school mechanical drawing.

21. Descriptive Geometry (3) I

Fundamental principles of descriptive geometry and their application to engineering problems. Solutions of point, line and plane problems; curved lines and surfaces; intersections of surfaces. One lecture and two three-hour laboratory periods per week. Prerequisite: Engr. 2, or equivalent, and sophomore standing.

22. Machine Drawing (3) II

Standard drawing methods and procedures, complete sets of working drawings of simple machine parts, gears and cams; includes tolerance dimensioning, sectioning, threads and fasteners. One lecture and two three-hour laboratory periods per week. Prerequisites: Engr. 21, Math. 3A-3B.

23. Materials of Engineering (2) II

A concise presentation of the physical properties of the common materials used in structures and machines, with brief descriptions of their manufacture and fabrication. Two lectures per week. Prerequisite: sophomore standing.

65A-65B. Industrial Practice (2-2) I, II

Supervised training in cooperating industrial organizations. First year of a three-year program providing the opportunity for selected students to correlate their formal college training with industrial experience at corresponding levels of responsibility and difficulty. Prerequisite: sophomore standing in Engineering. Selection based on personal interview following written application.

Upper Division Courses

100A-100B. Elements of Electrical Engineering (3-3) Year, I

Theory and characteristics of electrical equipment with emphasis on industrial applications. Lectures and problems. Semester I: Direct current circuit analysis. D. C. motors and generators. Introduction to alternating current circuits. Prerequisites: Math. 4A, Physics 4B, or permission of the instructor. Semester II: Alternating current circuit analysis. Transformers, alternators, induction and synchronous motors, conversion apparatus, and transmission lines. Prerequisite: Engr. 100A.

101A. Electrical Engineering Laboratory (2) I

Laboratory determination of the characteristics of direct current machinery and circuits, single phase alternating current circuits. One three-hour lab. and report per week. Prerequisite: Engr. 100A, or taken concurrently.

101B. Electrical Engineering Laboratory (2) II

Laboratory determination of the characteristics of single phase and polyphase circuits, machines, and related equipment. One three-hour laboratory period and report per week. Prerequisite: Engr. 100B, or taken concurrently.

102A-102B. Analytical Mechanics (3-3) Year, I

Lectures and problems. Emphasis on engineering applications. Semester I: Principles of statics which deals with the conditions of equilibrium of bodies acted upon by forces. Prerequisites: Physics 4A-4B, Math. 4A. Semester II: Principles of dynamics which deals with the fundamentals of rectilinear and curvilinear motion of particles and rigid bodies, and the rotation of rigid bodies. Prerequisite: Engr. 102A.

103. Basic Electronics (3) I (Same course as Physics 103)

A qualitative survey of electron tubes, amplifiers, and electronic systems. Prerequisites: Physics 4B or 2B and 3B. (Formerly offered as Physics 102.) Not open to students with credit for Physics 103.

104A-104B. Vacuum Tube Circuit Design (3-3) I, II
(Same course as Physics 104A-104B)

The design of resistance loaded amplifiers including negative feedback and its application to regulated power supplies, cathode followers, and DC amplifiers. Power amplifiers, oscillators, modulators and detectors. Prerequisites: Engineering or Physics 103 and 110, or permission of the instructor. Not open to students with credit for Physics 104A-104B. Students with credit for Engineering or Physics 104 may enroll in Engineering or Physics 104B.

105. Fluid Mechanics (3) II

The statics and dynamics of incompressible and compressible fluids. Viscosity, fluid friction. Dimensional analysis. Fluid measuring instruments. Flow of compressible and incompressible fluids in pipes. Flow of liquids in open channels. Pumps. Prerequisites: Engineering 102A, and Engineering 127.

106. Fluid Mechanics Laboratory (2) II

Characteristics of fluid measuring instruments. Fluid flow through pumps, etc. One three-hour laboratory and report per week. Prerequisite: Engineering 105 or concurrent registration.

107. Electrical Measurements (2) I (Same course as Physics 107)

The theory and application of electrical measurements, including the measurements of current, voltage, power, resistance, capacitance and inductance. Stress on determination of probable errors of measurements. One hour lecture and one three-hour laboratory period per week. Prerequisites: Physics 3A-3B or 4B, and a working knowledge of the calculus. Not open to students with credit for Physics 107.

110. Alternating Current Circuits (3) I (Same course as Physics 110)

The operator "j" applied to circuits containing resistance, capacitance and inductance; series and parallel resonance, coupled circuits; transients, practical circuit elements, networks. Prerequisites: Physics 4B and Mathematics 4A. Not open to students with credit for Physics 110.

122. Machine Design (4) I

Individual design of a useful machine encompassing fundamental considerations of simple machine parts. Practical design methods utilizing professional literature are stressed. Three lectures and one three-hour laboratory period per week. Prerequisite: Engineering 140.

123. Electronics Laboratory (2) I, II (Same course as Physics 123)

An experimental study of electron tubes and their associated circuits. Study of the cathode ray oscilloscope, vacuum tube voltmeter, characteristics of power supplies, amplifiers, and filter systems. One hour lecture and one three-hour laboratory period per week. Prerequisites: Engineering 107 or Physics 107; previous or concurrent registration in Engineering 104A or Physics 104A; or permission of the instructor. Not open to students with credit for Physics 123.

124. Radio Measurements (2) II (Same course as Physics 124)

Laboratory measurements of the parameters of resonant circuits at radio frequencies. Study of the properties of oscillators, modulators, directors and wave guides. An hour lecture and a three-hour laboratory period per week. Not open to students with credit for Engineering 124. Prerequisites: Engineering 123 or Physics 123, and previous or concurrent registration in Engineering 104B or Physics 104B.

125. Electric Power Transmission and Distribution (3) I

Electrical, mechanical, and economic factors in the analysis of electrical systems for the transmission and distribution of electrical energy. Prerequisites: Engineering 100B and Mathematics 4B.

126. Power System Analysis (3) II

Performance of generating and transmission equipment under normal and short-circuit conditions. Protective devices and metering. Prerequisites: Engineering 100B and Mathematics 4B.

127. Engineering Thermodynamics (3) I

An introduction to the basic principles of thermodynamics; laws of perfect gases, vapors and mixtures; cycles. Applications to engineering problems such as the analysis of heat, power, and refrigeration systems, and steady-flow processes. Lecture and problems. Prerequisites: Mathematics 4A and Physics 4C.

128. Applied Engineering Thermodynamics (3) I

The study of various types of heat power equipment; steam generation, turbines, reciprocating engines and auxiliaries; fuels and lubricating oils; gas and oil engines, gas turbines, refrigeration and compressors. The practical application of basic theory to proper, efficient operating practices is stressed. Lectures and problems. Prerequisite: Engineering 127.

129. Heat Power Laboratory (2) I

Testing of steam generators and heat balance of same; steam turbine; reciprocating engine; internal combustion engines; flue gases, lubricating oils and boiler feed water. Emphasis upon standardized testing procedures approved by SAE and ASME, and standard operating procedures. One three-hour laboratory period and report per week. Prerequisite: Engineering 127.

130. Route and Construction Surveying (3) I

Application of surveying to engineering problems. Methods of route surveys for highways, railroads, utilities. Construction surveys for buildings and other structures. Earthwork computations. Two lectures and one three-hour field period per week. Prerequisite: Engineering 1B.

135. Concrete Structures (3) II

Concrete structures including both plain and reinforced concrete. Practical application of the mathematical theories of mechanics and strength of materials, including analysis and design of such structures as dams, walls, floor slabs, columns, beams, and frames. Prerequisite: Engineering 140 or concurrent registration.

140. Strength of Materials (3) II

Elastic properties and strength of engineering materials. Analysis of types of failures. Stress analysis and deformation of simple structural and machine members. Photoelasticity. Lecture and problems. Prerequisite: Engr. 102A.

141. Materials of Engineering Laboratory (2) II

Theory and operation of testing machines and auxiliary apparatus. Conduct of tests to determine significant characteristics of commonly used engineering materials. Included are heat treatment of metals, metallographic tests, and photoelasticity. One three-hour laboratory and report per week. Prerequisite: Engr. 140, or taken concurrently.

142A. Structural Analysis (3) I

Determination of stresses in trusses, beams, and frames. Lectures, problems, demonstrations, and discussion. Statically determinate structures, including load analyses and graphical methods. Prerequisites: Engineering 102A and 102B and 140.

142B. Structural Analysis (2) II

Continuation of Engineering 142A. Various analytical and graphical methods applied to indeterminate structural problems. Prerequisite: Engineering 142A.

145. Internal Combustion Engines (3) II

Application of theory of thermodynamics to internal combustion engines. Essential features of design, operating characteristics, and application of gasoline, diesel, and gas engines, and the gas turbine. Lectures and problems. Prerequisite: Engineering 127. Recommended: Engr. 128.

150. Industrial Electronics (3) II

Photoelectricity and its applications; rectification and inversion; theory and applications of thyratrons and ignitrons including welding; radio-frequency heating; electrostatic precipitation; motor control and introduction to servomechanisms. Prerequisite: Engineering 103 or Physics 103.

156. Aerodynamics (3) II

Mechanics and thermodynamics of air; wing characteristics; drag; wind tunnel testing technique; propellers and power plants; aircraft performance; stability and control. Introduction to compressible aerodynamics. Lectures and problems. Prerequisites: Engr. 102A-102B.

165A-165B-165C-165D. Industrial Practice (2-2-2-2) I, II

Supervised training in cooperative industrial organizations. Second and third years of a three-year program providing the opportunity for selected students to correlate their formal training with industrial experience at corresponding levels of responsibility and difficulty. Prerequisites: Engineering 65A and 65B.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

173. Production Methods and Control (3) (Same course as Business 173)

Forecasting and estimating; authorization to manufacture; order, flow, block and load control; continuous versus intermittent production; use of drawings; tabulation of data; coordination of production with other factory departments. Not open to students with credit for Business 173. Prerequisite: Business 121.

176. Methods and Standards (3) (Same course as Business 176)

Work simplification through methods improvement; operations analysis; flow charts; calculation of time standards, work and speed analysis; new developments in job timing and motion economy study; time and reduction curves; work standards. Not open to students with credit for Business 176. Prerequisites: Business 121 and 173.

177. Quality Control (3) (Same course as Business 177 and Math. 177)

Statistical techniques; tolerances and variants; standards; organization for inspection; inspection methods for raw materials, work in process, and finished products; control of inspection devices. Not open to students with credit for Business 177 or Mathematics 177. Prerequisites: Business 121 and either Business 173 or Engineering 173 or equivalent, and either Economics 140 or Mathematics 12.

E-179. Manufacturing and Tooling Administration (3) Extension
(Same course as Business E-179)

Production breakdown and relationship to manufacturing plan and tooling policy; planning, processing, and control required to activate program into production. Relationship of design engineering, tool project engineering, and tool manufacturing to production. Not open to students with credit for Business E-179. Prerequisite: Business 173 or permission of instructor.

180. Principles of Engineering Economy (3) II

Analysis of the costs of development and promotion, construction, operation, depreciation and depletion. Capital recovery, income, return and yield. Valuations and appraisals, cost analysis and financial analysis. Application to engineering problems. Prerequisite: senior standing.

198. Senior Report (2) I, II

Investigation of specific problems of advanced nature. Preparation of report. Prerequisite: advanced senior standing.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

NOTE.—In laboratory courses special emphasis is placed upon the preparation of neat, concise, complete and intelligent reports.

ENGLISH

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major

A *major in arts and sciences* is offered in *English*. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: At least 12 units of work, in addition to English 1; at least six must be in a year course. Upper division requirements: A minimum of 24 upper division units in English and comparative literature, selected with the approval of a departmental representative; two years of lower division work in a foreign language or the equivalent reading knowledge of a language is strongly recommended. A minor is not required of students majoring in English.

Prospective majors of sophomore standing may, with the consent of the course instructor and subject to general college regulations (see section on Lower Division and Upper Division Courses), substitute six units of upper division electives for six units of lower division work, such upper divison units to be selected from the following: English 101A, 116A, 116B, 118A, 118B, 119A, 119B, 126A, 126B, 143A, 143B.

Students of junior or senior standing may substitute for any deficiencies in lower division requirements in English (except English 1) an equivalent number of units of upper division courses selected from the following: English 101A, 116A, 116B, 118A, 118B, 119A, 119B, 120A, 120B, 126A, 126B, 143A, 143B, 151, 159.

A *teaching major in English* is offered for the general secondary or junior high school credential. For specific information, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *English*. The minor consists of 15 to 22 units in English, nine units of which must be in courses carrying upper division credit.

A *teaching minor* is offered in English for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information refer to the outlines of requirements for these credentials.

Comparative Literature

For courses in world literature, see Comparative Literature; these courses give credit toward the English major or minor or toward the minor in comparative literature.

Credit in Course Sequences

All elective year courses in the department may be begun in either semester, and either semester may be taken singly for credit.

Lower Division Courses

A. English Fundamentals (3) I, II

The elements of composition, including drill in grammar and usage; exercises in vocabulary building and in fundamental reading skills; theme writing. Credit in this course is equivalent to passing the English A examination and may be counted toward graduation as an elective but not to satisfy lower division English requirements in any curriculum.

A-X. English for International Students (3) I

A first course in English grammar and composition. To be taken by international or bilingual students as a substitute for English A. Students are assigned to this course upon the recommendation of the faculty adviser and the student's performance on the English A placement examination. This course may be counted toward graduation as an elective but does not satisfy lower division English requirements in any curriculum or in general education.

R. Reading Laboratory (0) I, II

A semitutorial service offered by the English Department to those wishing to improve reading ability, or secure individual help with study problems. Open to all students at any level of college work. Consult department chairman.

W. Writing Laboratory (0) I, II

A semitutorial service offered by the English Department to those wishing assistance in writing projects, either remedial or advanced. Open to students at any level of college work. Consult department chairman.

***1. Freshman Composition (3) I, II**

Study and practice in the expression of ideas and factual materials; principles of organization and of effective style, with emphasis on exposition. Prerequisite: satisfactory English A examination or credit in English A.

***1-X. English for International Students (3) I**

A first course in English grammar and composition. To be taken by international or bilingual students as a substitute for English 1. Students are assigned to this course upon the recommendation of the faculty adviser and the student's performance on the English A placement examination.

***2. Freshman Literature: Imaginative (3) I, II**

Training in reading literary materials with insight and vividness. (Formerly English 2A).

***3. Contemporary Thought (3) I, II**

The improvement of comprehension through reflecting and reporting on current articles and books of nonfiction.

***10. Recreational Reading (1) I, II**

Development of personal tastes for leisure-time reading through lectures and written reports. May be taken a second time with new materials.

20. Latin and Greek Word Derivation (3) I
(Same course as General Language 20)

A general and elementary course in philology. Study of Latin and Greek roots of most frequent occurrence in English, and of the English words derived from them. No prerequisite. Not open to students with credit for General Language 20.

***50A-50B. Masterpieces of American Literature (3-3) Year, I**

Semester I: Major American writers from the beginning to 1860. Semester II: American literature from 1860 to the present.

***52A-52B. Masterpieces of World Literature (3-3) Year, I**
(Same course as Comparative Literature 52A-52B)

A chronological survey from Homer to modern times. The first semester stresses the classical epic and tragedy. The second semester stresses more recent literature, including prose fiction, the drama, and the essay. Not open to students with credit for Comparative Literature 52A-52B.

***56A-56B. Survey of English Literature (3-3) Year, I**

The study of some important works of English literature from the Anglo-Saxon period through the Victorian age, with emphasis upon the literary history of each period. Prerequisite: English 2 or 3, or consent of instructor.

***60A-60B. Literature and Personality (3-3) Year, I**

The close study of a limited number of the great creators of literature. The goal of the course is to derive, from markedly different specific works, orderly and generalized methods for the interpretation of great literature.

***61. Sophomore Composition (3) I**

Practical writing beyond the freshman level. Prerequisite: English 1 or equivalent.

***62. Directed Writing (3) II**

Guidance and extensive practice in effective creative writing, particularly description and narration.

Upper Division Courses

***101A. Modern Continental Fiction (3) II**
(Same course as Comparative Literature 101A)

A survey of leading French, Russian, Scandinavian, Italian, and German novelists and short story writers, from Tolstoy and his associates to the present day. Not open to students with credit for Comparative Literature 101A.

***106. Creative Writing (3) I** (Same course as Journalism 106)

A writing workshop in which the students are given opportunity to criticize each other's work. Emphasis on narrative and description, but freedom to pursue whatever writing forms may interest the student most. May be taken a second time with new material. Not open to students with credit for Journalism 106.

***110. Recreational Reading (1) I, II**

An advanced course in the group reading of modern drama, poetry and fiction.

113. American English (3) I

The development of American English; regional and cultural differences in pronunciation, grammar, and vocabulary.

***115. The Bible as Literature (3) I**
(Same course as Comparative Literature 115)

A study of the narrative, poetry, and prophecy of the King James version of the Bible. Readings, reports, lectures, and discussions. Not open to students with credit for Comparative Literature 115.

116A-116B. The Age of Elizabeth (3-3) Year, I

Semester I: Poetry and prose, exclusive of drama. Semester II: The drama to 1642, excluding Shakespeare.

***117A-117B. Shakespeare (3-3) Year, I**

The first semester gives special emphasis to the histories and comedies; the second, to tragedy and the dramatic romances.

118A-118B. Eighteenth Century English Literature (3-3) Year, I

The first semester emphasizes the social satire of Swift, Pope, Addison, Steele, Dryden, Gay, Prior; and also the first stirrings of the romantic revolt in a number of important poems and prose works. The second semester is devoted to Johnson and Boswell and their circle and to a significant romantic literature antedating the romantic outburst.

***119A. English Romantic Poetry (3) I**

The culmination of the romantic movement in the poetry of Wordsworth, Coleridge, Byron, Shelley, and Keats, in relation to the thought of the revolutionary period.

***119B. Victorian Poetry (3) II**

Tennyson and Browning with their contemporaries and successors, relating English poetry to Nineteenth Century life and thought.

120A. The Seventeenth Century: Milton (3) II (Alternate years)

The poetry and major prose works of Milton, with stress on the development of his art and mind; the political and religious background and the events in which Milton participated.

120B. The Seventeenth Century: Milton's Contemporaries (3) II (Alternate years)

The Seventeenth Century poets and prose writers, excluding Milton; the Metaphysical and Cavalier poets; the beginnings of the essay and biography.

126A. Romantic and Victorian Prose (3) I

Romantic and mid-Victorian prose writers, including Coleridge, Hazlitt, Lamb, DeQuincey, Carlyle, Landor, Macaulay, and Mill, related to the literary, political, and social movements of the period.

***126B. Late Nineteenth Century British Prose (3) II**

The essays of Arnold, Thomas Huxley, Newman, Pater, Ruskin, and Stevenson. Study of scientific, aesthetic, and ethical backgrounds.

***129. Contemporary British Literature (3) II**

Selected prose and poetry of England and Ireland from 1914 to the present, including Shaw, Yeats, Synge, Joyce, Maugham, Huxley, D. H. Lawrence, Eliot, the Oxford poets, and the principal authors belonging to the two wars.

***131. American Literature: 1820-1860 (3) I**

The study of the important romantic writers, with emphasis on the New England group.

***132. The Frontier and American Literature (3) I, II**

The influence of the frontier upon American literature studied through various regions and movements. Examinations of source materials, biographies, and representative writers.

***133. American Literature: 1860-1910 (3) II**

The rise of realism in American literature. Influences, foreign and native, which promoted the movement. Definition of realism. The literary creed of the realists. The romantic attack and the realist defense.

***134. American Literature: 1910 to the Present (3) I, II**

Ideas and forms in representative poetry and prose.

143A-143B. The English Novel (3-3) Year, I

The history of the English novel from its beginnings to the present century. Emphasis in the first semester will be on the Eighteenth Century and in the second semester on the Nineteenth Century.

***149. The Study of Poetry (3) II**

A course proceeding from simpler to more complex poetic productions, and designed to bridge the widening chasm between the poet and the ordinary man. Emphasis on current directions in poetry, and on poetry as an oral and auditory art.

151. Chaucer (3) I

A study of Chaucer's works, with emphasis on "The Canterbury Tales" and "Troilus and Criseyde."

***152A-152B. World Drama (3-3) Year, I**
(Same course as Comparative Literature 152A-152B)

Study of selected tragedies and comedies from Asiatic, European, English, and American literature, with emphasis upon the human problems depicted therein and upon the timelessness of certain themes, such as those of Electra and Medea. Lectures, discussions, and reports on readings. Not open to students with credit for Comparative Literature 152A-152B.

162. Magazine Fiction (3) I (Same course as Journalism 162)

Coaching in constructing and writing short stories for commercial publications. Admission by consent of the instructor. Not open to students with credit for Journalism 162.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

189. Studies in American Folklore (3) II

American folk songs, tales, legends, superstitions, proverbs, and speech, with particular emphasis on one of these.

191. Advanced Composition (3) I

A course designed for prospective teachers of secondary school English. This is not a methods course, but a content course in grammar, composition, and journalism. Required of all teaching majors in English; open to other students as an elective.

192. The English Language (3) II

The study of the history of the English language, of its words and structure, of the changes in inflections, pronunciation, vocabulary, and meaning, and of its use of an instrument of communication and human living. Open only to seniors and graduate students.

195. Literary Criticism (3) I

A historical survey of the principles and practices of literary criticism from Greek times to the Nineteenth Century. Readings in the works of Aristotle, Horace, Longinus, Sidney, Boileau, Dryden, Lessing, Sainte-Beuve, Coleridge, and Arnold. Open only to senior and graduate students.

198. Comprehensive Reading and Survey (3) II

A study of major movements in English literature through a review of important writers and key works. Individual programs of readings to fill the needs of each student. Open only to students with nine upper division units in English.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

200. Seminar (2) I, II

An intensive study of some phase of literature. The course may be repeated for each subject. (a) The critical study of a major author (such as Shakespeare, Dickens, Mark Twain); (b) the study of a cultural period through its literature (Renaissance, Enlightenment, Romantic Revolution, etc.); (c) the study of a literary problem (such as Regionalism in American Literature, or European influences in American Literature); (d) the study of a literary type (Personal Essay, Epic, Tragedy, etc.). May be repeated with new materials for additional credit.

290. Bibliography (2) II

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff: to be arranged with department chairman and instructor.

299. Thesis (3)

Guidance in the preparation of a project or thesis for the master's degree.

FRENCH

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major

A *major in arts and sciences* is offered in *French* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: in the major, French 1, 2, 3, 4, 5, 6; in other foreign languages, German 1, 2, or Spanish 1, 2, or Latin 1, 2. Six units in elementary German or Spanish may also be applied toward general education requirements. Recommended: History 4A-4B. Upper division requirements: a minimum of 24 upper division units, at least 21 units of which must be in French, including French 198. The remaining three units may be selected from French 115, 116; Geography 118; History 121A-121B, 131A-131B, 141, 142, 143A-143B, 144A-144B; or Comparative Literature 101A, 140A-140B, 152A-152B, 159, in consultation with the chairman of the department.

A person majoring in French must have a minor to be decided upon in consultation with his major adviser.

A *major in arts and sciences* is offered in *Romance Languages*. For specific information on this major, refer to the section on Romance Languages.

A *teaching major* is offered in *French* or in *Romance Languages* for the junior high school and general secondary credentials. For specific information, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *French*. The minor consists of 15 to 22 units in French, six units of which must be in courses carrying upper division credit.

A *teaching minor* is offered in French for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to these credentials.

Lower Division Courses

***1. Elementary (3) I, II**

Pronunciation, oral practice, readings on French culture and civilization, minimum essentials of grammar.

***2. Elementary (3) I, II**

Continuation of French 1. Prerequisite: French 1 or one year of high school French.

***3. Intermediate (3) I, II**

Reading in French of cultural material, short stories, novels or plays; oral practice; outside reading with oral and written reports. Prerequisite: French 2 or two years of high school French.

***4. Intermediate (3) II**

Continuation of French 3. Prerequisite: French 3 or three years of high school French.

5. Intermediate (2) I, II

A practical application of the fundamental principles of grammar by means of oral and written work based on French texts. Prerequisite: French 2 or two years of high school French.

6. Intermediate (2) II

Continuation of French 5. Prerequisite: French 5 or three years of high school French.

10. Conversation (2) I

Practice in the spoken language; practical vocabulary, conversation on assigned topics; simple dialogues and plays. Prerequisite: French 2 or two years of high school French.

11. Conversation (2) II

Continuation of French 10. Prerequisite: French 10 or French 3, or three years of high school French.

***15. French Civilization (2) I**

The major currents and characteristics of French culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

***16. French Civilization (2) II**

Continuation of French 15. No prerequisite.

8A-8B. Scientific Reading (3-3) I

Reading taken from the fields of chemistry, physics, medicine, zoology, biology, etc. Outside readings of books and periodicals, with written reports. Prerequisite: French 2 with a grade of C or two years of high school French.

Upper Division Courses

101A-101B. Conversation and Composition (3-3) Year, I (Offered 1956-57)

Translation into French from moderately difficult English prose. Outside reading of modern French prose, with written reports in French monthly. Readings and oral discussions in French of various facets of French life and culture. Prerequisite: French 4 and 6, or their equivalent, with a grade of C, or permission of instructor.

105A-105B. Modern French Drama (3-3) Year, I (Offered 1957-58)

Plays of Victor Hugo, de Vigny, de Musset, Scribe, Augier, Dumas fils, Pailleron, Brieux, Hervieu, Maeterlinck, Rostand, and others read and discussed as to subject matter and technique. Outside reading and reports. Prerequisite: French 4 and 6, or their equivalent, with a grade of C.

107A-107B. Eighteenth Century Literature (3-3) Year, I (Offered 1956-57)

The works of Montesquieu, Voltaire, Rousseau, the Encyclopédistes, as well as the theatre and novel of the period. Outside reading and reports. Prerequisite: French 4 and 6, or their equivalent, with a grade of C.

110A-110B. Modern French Novel (3-3) Year, I

The French novel from Victor Hugo to the present day, including such authors as: Hugo, Dumas, Stendahl, Balzac, Flaubert, Loti, Anatole France, Bourget, Bordeaux, Bazin, Barrès, Romain Rolland, A. Gide, Marcel Proust, and others. Class reading, outside reading, and reports. Prerequisite: French 4 and 6, or their equivalent, with a grade of C.

111A-111B. Seventeenth Century Dramatic Literature (3-3) Year, I (Offered 1958-59)

Reading in class of plays of Molière, Corneille, and Racine. Outside readings and lectures on the background of the seventeenth century in France. Prerequisite: French 4 and 6, or their equivalent, with a grade of C.

***115. French Civilization (2) I**

An advanced course in French of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: sophomore standing.

***116. French Civilization (2) II**

Continuation of French 115. Prerequisite: sophomore standing.

150-S. Advanced Phonetics and Diction (3) Summer

For students and teachers of French wishing to perfect their pronunciation and diction. Correct formation of French sounds in isolation and combination. Class exercises, individual drill, and use of special discs and tape recording. Prerequisite: two years of college French or its equivalent.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

198. Comprehensive Reading and Survey Course (3) II

Designed to fill up the gaps in the reading done in courses. Class meeting once a week for guidance, reports, and quizzes. Required of all seniors majoring in French.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

214. Contemporary French Literature (2) I

An intensive study of the current movements and techniques in the novel, poetry, and theatre in France from 1900 to the present day. Class discussion, outside readings, written reports. Prerequisite: nine units of upper division French and graduate status.

220. Explication de Textes (2) II

An introduction to the analytical French approach to the detailed study of literature. Demonstrations by instructor and students. This course aims to give teachers of French a greater mastery of French language and literature. Prerequisite: nine units of upper division French and graduate status.

290. Bibliography (1) See Romance Languages

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

Master's degree candidates in French are expected to substitute a comprehensive examination for the thesis. In unusual cases a student may write a thesis with the permission of the department.

GENERAL CULTURE

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major or minor work is not offered in general culture courses. These courses are carried as part of the offerings of the Foreign Languages Department. They are conducted in English and are open to all students. A knowledge of foreign language is not required.

Lower Division Courses

French *15. French Civilization (2) I

The major currents and characteristics of French culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

French *16. French Civilization (2) II

Continuation of French 15. No prerequisite.

German *15. German Civilization (2) I

The major currents and characteristics of German culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

German *16. German Civilization (2) II

Continuation of German 15. No prerequisite.

Spanish *15. Spanish Civilization (2) I

The major currents and characteristics of Hispanic life and culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

Spanish *16. Spanish Civilization (2) II

Continuation of Spanish 15 with emphasis on Spanish America. No prerequisite.

General Culture 17-S. European Civilization (3) Summer

A study of the civilization of Europe through a conducted travel tour.

Upper Division Courses

French *115. French Civilization (2) I

An advanced course in French culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: sophomore standing.

French *116. French Civilization (2) II

Continuation of French 115. Prerequisite: sophomore standing.

German *115. German Civilization (2) I

An advanced course in German culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: sophomore standing.

German *116. German Civilization (2) II

Continuation of German 115. Prerequisite: sophomore standing.

Spanish *115. Spanish Civilization (2) I

An advanced course in Hispanic culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: sophomore standing.

Spanish *116. Spanish Civilization (2) II

Continuation of Spanish 115 with emphasis on Spanish America. Prerequisite: sophomore standing.

General Culture 117-S. European Civilization (3) Summer

A study of the civilization of Europe through a conducted travel tour. Prerequisite: sophomore standing.

GENERAL LANGUAGE

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major or minor work is not offered in general language.

Lower Division Courses

General Language 20. Latin and Greek Word Derivation (3) I
(Same course as English 20)

A general and elementary course in philology. A study of Latin and Greek roots of most frequent occurrence in English, and of the English words derived from them. No prerequisite. Not open to students with credit for English 20.

General Language 30. Pronunciation of French, Italian and German (1-3) II

A course designed especially to meet the needs of singers, radio announcers, etc. No prerequisite. This course may be taken for one, two or three units of credit depending on the individual student's need.

GEOGRAPHY

IN THE DIVISION OF SOCIAL SCIENCES

Major

A *major in arts and sciences* is offered in *geography* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: in the major, Geography 1 and 2; in related field, Geology 1A-1B. Recommended: a reading knowledge of German and French. Upper division requirements: a minimum of 24 upper division units in geography, or 18 units in geography and six units selected from related fields with approval of the chairman of the department. A minor is not required; however, students are urged to complete one minor.

A *teaching major* is not offered in geography; however, courses in geography may be used as part of the *social science major* for the junior high school credential or the general secondary credential. For specific information, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *geography*. The minor consists of 15 to 22 units in geography, six units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in geography; however, it may be used as a part of the *social science minor* for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to these credentials.

Lower Division Courses

***1. Introduction to Geography: Physical Elements (3) I, II**

The nature of maps, weather and climates of the world; natural vegetation; land forms and their associated soils, with reference to their climatic relationships; the seas and their coasts. One field trip. This course is classified as a natural science. (See general education requirements.)

***2. Introduction to Geography: Cultural Regions (3) I, II**

The regional differentiation of the world by human activity; areal bases of economy and nationality. Not open to students with credit for Geography 12A or 12B. Prerequisite: Geography 1.

3. Elementary Meteorology (3) I, II

An elementary study of the earth's atmosphere and changes in it which produce our weather and influence human affairs. Special attention given to local conditions, instruments, and records.

***10. Economic Geography (3) I, II**

Beginning course in economic geography designed for commerce and economics majors.

***12A-12B. Culture Worlds (3-3) I, II**

A study of the evolution, distinguishing cultural characteristics and physical features of the major culture regions of the world, with emphasis on the role man has played in the alteration of the natural landscape. Not open to students with credit for Geography 2.

Upper Division Courses

112. Geography of California (3) II

The physiographic regions of California and the cultural landscapes developed by the successive cultural groups. Prerequisite: Geography 1 or consent of instructor.

113. Climatology (3) II

A survey of the principal classifications of climates of the world; regional characteristics of climate; relations to soils, vegetation, and human activities. Prerequisite: Geography 1 or consent of instructor.

117. Geography of Northern and Eastern Europe (3) II

A study of the cultural development of the countries of northern and eastern Europe in relation to physical background and historical evolution. Prerequisite: Geography 1 or consent of instructor.

118. Geography of the Mediterranean Area (3) II

A study of the cultural development of the countries of Southern Europe, Western Asia, and North Africa in relation to physical background and resources. Prerequisite: Geography 1 or consent of instructor.

119. Geography of South America (3) II

A study of the physical regions and human geography of South America, including a review of the history of colonization and the exploitation of resources. Prerequisite: Geography 1 or consent of instructor.

120. Geography of Middle America (3) I

A study of the physical and human geography of Mexico, Central America, and the islands of the Caribbean, including a review of the history of colonization and the exploitation of resources. Prerequisite: Geography 1 or consent of instructor.

121. Geography of North America (3) I

The natural regions of North America, their formation and economic and historical development. Prerequisite: Geography 1 or consent of instructor.

124. Geography of Asia (3) I

The cultural regions of Asia, their physical environment, and historical development. Prerequisite: Geography 1 or consent of instructor.

125. Geography of the Pacific Basin (3) II

A geo-political approach to the study of the islands in, and the lands marginal to, the Pacific Ocean. Prerequisite: Geography 1, or consent of the instructor.

135. Geography of the San Diego Area (3) II

Directed individual urban and rural field work in the San Diego area; the mapping of a small area and making its geographic interpretations. Prerequisite: Geography 1 and 2 or consent of instructor.

***145. Conservation of Natural Resources (3) II**

Nature and extent of mineral, soil, water, forest, and wild life resources and their conservation; with particular emphasis on the United States, against a general background of world resources. Conservation philosophies and practices, and their geographic bases. Prerequisite: Geography 1 or consent of instructor.

150. World Political Geography (3) I, II

A study of geography as it relates to the strength of nations and international relations. Not open for credit to AFROTC contract students.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: Permission of instructor.

Graduate Courses

200A-200B. Seminar (2-2) Year, I

290. Bibliography (1)

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: Permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

Guidance in the preparation of a project or thesis for the master's degree.

GEOLOGY

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *major in arts and sciences* is offered in *geology* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Geology 1A or Geology 2 and 3, Geology 1B, Geology 21, Chemistry 1A-1B, Engineering 1A, Engineering 2 (if mechanical drawing was not completed in high school), Mathematics 3A, and Physics 2A-2B or Physics 4A-4B-4C. (Nine units in physical science may be counted toward general education requirements in natural science.) Upper division requirements: 24 units of geology including Geology 100 and 108. A minor is not required.

A *teaching major* is not offered in geology; however, courses in this field may be used as part of the *general science major* for the junior high school credential. For specific information, refer to this credential.

Minor

A *minor in arts and sciences* is offered in *geology*. The minor consists of 15 to 22 units in geology, six units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in geology; however, courses in this field may be used as part of the *general science minor* for the special secondary, the general elementary, and the kindergarten-primary credentials and for the *physical science and general science minor* for the general secondary credential. For specific information, refer to these credentials.

Lower Division Courses

1A. Physical (4) I

The composition, origin, and distribution of earth materials, and their modification through mechanical and chemical process of change. Three lectures and one three-hour laboratory period weekly with related field study during the semester. (Not open to students who have had Geology 2.)

1B. Historical (4) II

Theories of earth origin, and the evolutionary history of the earth as traced through rock and fossil records. Consideration of the Paleontologic Sequence. Three lectures and one three-hour laboratory period weekly, with arrangement for field study and conference during the semester. Prerequisite: Geology 1A or equivalent.

***2. General Geology (3) I, II**

Earth materials and processes, the development of land forms, and a brief consideration of the history of the earth. Open to all students except those with previous credit in geology. No prerequisites.

***3. General Geology Laboratory (1) I, II**

Recognition of common earth materials with experience in both field and map relationships. Designed to accompany Geology 2, but entirely separate and complete in itself. One three-hour laboratory period weekly. Open to all students except those with previous laboratory credit in geology. No prerequisites.

***4. Physiography of United States (3) II**

Geologic history and present features of the main physiographic provinces of United States. Prerequisite: Geology 1A or 2.

21. Elementary Mineralogy (4) I

Practice in the determination of common minerals and rocks, their geologic environment, utilization and economic significance. Two lectures and two three-hour laboratory periods weekly. No prerequisite.

22. Advanced Mineralogy (4) II (Offered in 1955-56 and alternate years)

Continuation of Geology 21 with emphasis on the origin, concurrence, identification, and classification of the rocks in which the minerals occur. Two lectures and two three-hour laboratory periods weekly. Prerequisite: Geology 21.

Upper Division Courses

100. Structural Geology (3) I (Offered in 1956-57 and alternate years)

The evolution and description of the structural and topographical features of the earth. Faulting, folding, and orogenic forces with practical illustrations from the North American Continent and California geologic conditions. Lectures, discussions, and occasional field trips. Prerequisite: Geology 1A-1B or equivalent.

101. Museum Work (1-2) I, II

Selection and preparation of materials for the college museum collections. Emphasis upon creation of self-instructive displays for use on the elementary and secondary as well as the collegiate level. Prerequisite: Geology 1A-1B, and consent of the instructor. May be repeated for maximum not to exceed six units where quality of work and student capacity justify.

102. Geology of California (3) II

Directed reading and group discussion of California geologic literature. Designed to acquaint the student not only with the important structural and geomorphic units of the State but with the variety of important source materials of geologic literature as well. Use of bibliographies, state and federal surveys, research publications, etc. Prerequisite: Geology 1A-1B, and consent of the instructor.

106. Paleontology (3) I (Offered 1955-56 and alternate years)

A review of the life forms of the geologic periods with particular emphasis on the marine invertebrates. Two lectures and one three-hour laboratory period per week. Prerequisite: Geology 1B.

108. Field Geology (1-4) I, II

Techniques of geologic mapping. Preparation of a geologic map and report of a field area. Work primarily on week ends. Prerequisites: Geology 1B or equivalent, and consent of instructor. May be repeated to a total of eight units.

122. Petrology (3) II (Offered 1956-57 and alternate years)

The origin, occurrence, identification, and classification of rocks and minerals with emphasis on hand specimen characteristics. Two lectures and one three-hour laboratory per week. Prerequisites: Geology 1A or Geology 2 and 3, and Geology 21.

166. Honors Course (Credit to be arranged) I, II

Special work in any of several phases of geologic science for students of demonstrated ability. Refer to the Honors Program.

199. Special Study (1-6) I, II

Individual study in field, library, laboratory, or museum work. Six units maximum credit. Prerequisite: permission of instructor.

GERMAN

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major work is not offered in German.

A minor in arts and sciences is offered in *German*. The minor consists of 15 to 22 units in German, six units of which must be in courses carrying upper division credit.

Lower Division Courses

***1. Elementary (3) I, II**

Pronunciation, oral practice, readings on German culture and civilization, minimum essentials of grammar.

***2. Elementary (3) I, II**

Continuation of German 1. Prerequisite: German 1 or one year of high school German.

***3. Intermediate (3) I, II**

Reading in German of cultural material, short stories, novels or plays; oral practice; outside reading with oral and written reports. Prerequisite: German 2 or two years of high school German.

***4. Intermediate (3) II**

Continuation of German 3. Prerequisite: German 3 or three years of high school German.

5. Intermediate (2) I, II

A practical application of the fundamental principles of grammar by means of oral and written work based on German texts. Prerequisite: German 2 or two years of high school German.

6. Intermediae (2) II

Continuation of German 5. Prerequisite: German 5 or three years of high school German.

10. Conversation (2) I

Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays. Prerequisite: German 2 or two years of high school German.

11. Conversation (2) II

Continuation of German 10. Prerequisite: German 10, or German 3, or three years of high school German.

***15. German Civilization (2) I**

The major currents and characteristics of German culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

***16. German Civilization (2) II**

Continuation of German 15. No prerequisite.

8A-8B. Scientific Reading (3-3) I

First semester, readings in scientific reader on chemistry, physics, etc.; occasional written reports on scientific subjects read outside of class; sight reading. Second semester, readings in special scientific or technical works; weekly written reports required; sight reading. Prerequisite for 8A: German 2 with a grade of C or two years of high school German; for 8B: German 8A or German 3, with a grade of C, or three years of high school German.

Upper Division Courses

101A-101B. Advanced Conversation and Composition (3-3) Year, I

Translation into German of moderately difficult English prose. Free composition in German, written and oral. Outside reading of modern German plays and prose, discussions in German. Oral and written practice in conversational German. Prerequisite: German 4 and 6, or their equivalent, with a grade of C, or permission of instructor.

***115. German Civilization (2) I**

An advanced course in German culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: sophomore standing.

***116. German Civilization (2) II**

Continuation of German 115. Prerequisite: sophomore standing.

142. The Golden Age of German Literature (3) I, II
(Same course as Comparative Literature 142)

Masterpieces of German literature from the Eighteenth and early Nineteenth Centuries. Lectures in English, readings and written reports in German. Not open to students with credit for Comparative Literature 142.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

HEALTH EDUCATION

IN THE DIVISION OF HEALTH EDUCATION, PHYSICAL EDUCATION AND RECREATION

Major

An *arts and sciences major* is not offered in health education.

A *teaching major in health education* is offered for the general secondary credential. This major is designed around the plan for a general major and may be used for the A.B. degree by students who have been admitted to candidacy for the general secondary credential and have completed a minimum of eight units in professional education courses, including Education 184A-184B, by the date of degree candidacy. For a statement of requirements refer to the general secondary credential.

Minor

A *minor in arts and sciences* is offered in *health education.* The minor consists of 15 to 22 units in health education, nine units of which must be in courses carrying upper division credit. Courses will be determined in consultation between student and departmental representative.

A *teaching minor in health education* is offered for the general secondary and the special secondary credentials. For a statement of requirements, refer to the credential.

Lower Division Courses

***21. Principles of Healthful Living (2) I, II**

An approach to the personal health problems of college students. Scientific health information is provided, and an attempt is made to promote wholesome attitudes and desirable practices relating to healthful living. Includes instruction as required by statutes on safety, fire prevention, and harmful effects of alcohol and tobacco. Required of all freshmen.

65. Community Health (3) I, II

Community health problems; the role of the citizen, of the public, and of community health agencies in promoting and protecting the health of the community.

***90. Physiology of Reproduction (1) I, II**

A series of lectures and discussions dealing with normal and abnormal physiology and anatomy of reproduction; facts and frauds in sex hygiene, and related topics.

Upper Division Courses

145. Safety Education and Accident Prevention (3) II

Highway safety, the fundamentals of safety programs and techniques in home, school and industry. Partially satisfies the requirements for state credential in driver education.

151. Health Education for Teachers (2) I, II

The teacher's function in the different aspects of the school health program; environment, services, and instruction. Special attention is given to materials and material sources, and to community relationships and resources. Separate sections for elementary and secondary teachers are offered.

152. Health Education Programs (3) I

The construction of the health education program including objectives, scope and sequence of instruction, teaching methods, source materials and evaluation procedures; practice in building instructional units.

153. Administration of the School Health Program (3) II

Administrative responsibilities and procedures in organizing and conducting the school health program. Principles, policies, and practices involved in instruction, service, environment, and community relationships. Partially fulfills Health and Development Credential requirement for nurses.

154. Workshop in Health Education (2) Summer

For elementary and secondary administrators, school nurses, and teachers. The workshop provides opportunities for participants to work together toward the improvement of the total school health program in such areas as health instruction, health services, health environment, and community health. May be taken twice for credit.

190. Introduction to Public Health (3) I

Philosophy, development, organization, administration, and legal aspects of public health in the United States. Disease prevention and control, health education, and the other functions and activities of official health departments, voluntary agencies, private physicians and others engaged in professional health work.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

200. Evaluation Procedures in Health, Physical Education and Recreation (2) I
(Same course as Physical Education 200)

A study of tests and measurements in the profession with practice in their use, construction and interpretation of results. Not open to students with credit for Physical Education 200.

202. Problems in Health Education (2) (Alternate Years)

Current problems in Health Education, studied through a review of the literature, discussion of trends, observation of school situations, together with the analysis and evaluation of actual problems. Written reports required.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3) I, II

Guidance in the preparation of a project or thesis for the master's degree.

HISTORY

IN THE DIVISION OF SOCIAL SCIENCES

Major

A *major in arts and sciences* is offered in *history* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division: Required in the major: History 4A-4B, or 8A-8B. Recommended in general education for majors: Political Science 1A-1B, or 71A-71B, or Economics 1A-1B. Both of the above history courses are recommended for students planning to major in history. No freshman shall enroll in more than one lower division course in history during any one semester without the permission of the department. Upper division requirements: A minimum of 24 upper division units in history, including History 198, and a minimum of a year of concentration in each of three of the following fields: (a) Ancient and Medieval; (b) Modern Europe; (c) United States; (d) Latin America; (e) Pacific Area and the Far East. These courses must be selected under the guidance of the chairman of the department. A reading knowledge of one foreign language is strongly recommended. History majors are not required to complete a minor.

A *teaching major* is not offered in history; however, courses in history may be used as part of the *teaching major in social sciences* for the general secondary and junior high school credentials. For statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *history*. The minor consists of 15 to 22 units in history, nine of which must be in courses carrying upper division credit, including a year course.

A *teaching minor in history* is offered for the general secondary credential. Courses in history may be used as part of the social science teaching minor for the special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Explanation of Courses

NOTE: History 17A-17B does not count toward credit for a major in history.

Any history course, with the exception of History 17A-17B and 270A-270B, may be taken either semester, the A part not being a prerequisite to the B part.

Lower Division Courses

***4A-4B. History of Modern Europe (3-3) Year, I, II**

A survey of European society, institutions and politics from about 1500 to the present. Fall semester: 1500-1799. Spring semester: 1799 to the present.

***8A-8B. History of the Americas (3-3) Year, I**

Survey of the history of the western hemisphere from its discovery to the present time. This year course meets the graduation requirement in American history, institutions and ideals.

***17A-17B. History of American Civilization (3-3) Year, I**

Survey of the political and social development of the United States, with emphasis upon the rise of American civilization and ideals. This year course meets the graduation requirement in American history, institutions and ideals, and the United States Constitution. The second semester course, 17B, also covers the required materials in California state and local government.

Upper Division Courses

111A-111B. Ancient History (3-3) Year, I

Fall semester: Greek history to the Roman conquest. Spring semester: Roman history to the fifth century A.D.

***121A-121B. Medieval History (3-3) Year, I**

Survey of the main events of European social, cultural, religious, political and economic history, between 500 and 1400 A.D.

131A-131B. Renaissance and Reformation (3-3) Year, I

A history of personalities and events connected with the social, political, cultural, economic and religious change between 1300 and 1600. Not open to students with credit for History 132-S.

132-S. Culture of the Renaissance (3) Summer

Development of art, literature, philosophy and social life between 1300 and 1600. Not open to students with credit for History 131A-131B.

141. Europe in the Seventeenth and Eighteenth Centuries (3) I

European thought, politics and international relations from the Thirty Years' War and Louis XIV to 1763.

142. The French Revolution and Napoleonic Era (3) II

Study of conditions in France prior to 1789, the Revolution, 1789-1799, the organization of France and Europe under Napoleon, character of his empire, and the reorganization of Europe at the Congress of Vienna.

143A-143B. Europe in the Nineteenth Century (3-3) Year, I

Reaction in Europe, the development of nationalism, the impact of industrialism and social reform.

144A-144B. Europe in the Twentieth Century (3-3) Year, I

Political and social developments from 1870 to the present.

145-S. Diplomatic History of Europe, 1870-1920 (3) Summer

Survey of treaties, alliances and ententes leading up to World War I; World War I and the subsequent international settlements to 1920.

151A-151B. History of England (3-3) Year, I

Political, constitutional, social and economic developments since 1066. Designed for prelegal students, majors in English, and as a background for American History.

156A-156B. History of British Expansion (3-3) Year, I

Study of the growth and development of the British Empire from the first overseas empire to the present. History 156B not open to students with credit for Political Science 160.

161. Mexico and Caribbean Countries (3) I

Special attention to relations between the United States and these countries, and to recent developments in Mexico.

162. South America Since Independence (3) II

Republics of South America. Development of nationality, struggles for political stability, exploitation, diplomatic and commercial relations with the United States, and other international problems of South America. Survey of present-day conditions.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

171A-171B. Rise of the American Nation (3-3) Year, I
(Offered in 1956-57 and alternate years)

The colonial period in American history through the American revolution.

***172A-172B. Development of the Federal Union (3-3) Year, I**

Political, cultural, social, and intellectual aspects of the Confederation and Convention of 1787; the administrations of Washington, through John Quincy Adams. This year course meets the graduation requirements in American history, institutions and ideals. History 172A meets the graduation requirement in United States Constitution. History 172B includes materials which meet the requirements in California state and local government.

173A-173B. The Expansion of the United States (3-3) Year, I
(Offered in 1955-56 and alternate years)

Lectures and readings on Jacksonian democracy, territorial expansion and the Mexican War, the slavery controversy, Civil War and Reconstruction, and attention to the growth and progress of the United States to the close of the nineteenth century.

175A-175B. The United States in the Twentieth Century (3-3) I

The rise of the United States to the position of a world power; social and economic problems posed by the machine age; political action and adjustment, actual and proposed, intended as solutions for these problems.

176A-176B. American Foreign Policy (3-3) Year, I
(Same course as Political Science 158A-158B)

Lectures and readings in the field of American foreign relations since 1776, with special emphasis, in the second semester, upon affairs since 1900. A general survey course. Not open to students with credit for Political Science 158A-158B.

***179A-179B. Intellectual History of the American People (3-3) Year, I**

A study of the ebb and flow of ideas in the United States since the founding of the English colonies, with special attention devoted to social and political thought. This year course meets the graduation requirement in American history, institutions and ideals.

181A-181B. History of the West (3-3) Year, I

The American frontier: Expansion, exploration, settlement and building of the new states, with emphasis upon frontier problems of defense, communications, finance, etc.; the development of cultural institutions. A critical examination of the causes, effects and results of the frontier experiences of the American people.

189. History of California (3) I, II

The economic, social, intellectual, and political development of California from the earliest times. Emphasis will be on the founding of California, international struggles for California; American conquest and Gold Rush Era; development of California as a state. This course meets the graduation requirement in California state and local government.

190A-190B. History of the Pacific Ocean Area (3-3) Year, I

A general survey of the history and civilization of the peoples of the Pacific, with special emphasis upon exploration, trade, international rivalries, and social evolution of the island areas. (Formerly History 9A-9B.)

191A-191B. History of the Far East (3-3) Year, I

Particular emphasis during the first semester upon the history, both internal and international, of the Far East through the nineteenth century. The second semester will be devoted to a consideration of developments in the twentieth century.

192. History of Russia (3) II

A general survey emphasizing the period since Peter the Great; the Russian Empire's relations with its national minorities; Tsarist experiments in political and social reform; revolutionary socialism; the development of the U. S. S. R.

193. History of China (3) I (Offered in 1956-57 and alternate years)

A survey of Chinese history and institutions from antiquity to the present.

194. History of Japan (3) I (Offered in 1955-56 and alternate years)

A general survey of the political, economic and social development from the foundation of the empire to contemporary times. Special attention will be given to religions, philosophy, literature, and the arts.

198. Introduction to Historiography and Historical Method (2) II

Required of all students with a history major. To be attended during the senior year. Open to social science majors.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

270A-270B. Seminar (2-2) Year, I

Required of all candidates for the M.A. degree in history. Open to social science majors. Prerequisite: permission of instructor. 270A is a prerequisite for 270B.

290. Bibliography (1)

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

Guidance in the preparation of a project or thesis for the master's degree.

HOME ECONOMICS

IN THE DIVISION OF FINE ARTS

The program of study in home economics is planned for students who are interested in home economics as a background for everyday living, preparation for family life, and education for parenthood, and for students planning to enter commercial home economics or the field of teaching. The home arts curriculum, described below, offers a general program for students desiring a broad type of training in home arts. The major in home economics offers a greater opportunity for concentration in the field, including preparation for entry into commercial home economics or the field of teaching.

Major

A *major in arts and sciences* is offered in *home economics*. Requirements in the the major are in addition to the 45 units required in general education courses. A minor is not required.

Specific requirements for the major: lower division: Home Economics 2, 3, 15, 40, 41, 42, 43, 70; in related fields: Art 6A and Economics 1A (general education courses); Biology 1, Chemistry 2A-2B, and Physics 5. (12 units in natural science may be counted toward general education requirements.) Upper division: 24 units to include Home Economics 100, 115, 130, 131, 150, 151, 170, 180, and five units to be selected from Home Economics 117, 118, 135.

Minor

A *minor in arts and sciences* is offered in *home economics*. The minor consists of 15 to 22 units in home economics, nine units of which must be in courses carrying upper division credit. Lower division requirements: Home Economics 3, 15, and 70. Upper division requirements: Home Economics 150 and six units of upper division electives in home economics.

A *teaching minor in home economics* is offered for the general secondary and junior high credentials. For statement of requirements, refer to these credentials. A student with a minor in home economics may teach home economics in junior high school with a junior high school credential. Through counseling with the adviser in home economics, a student may so extend the minor in home economics that the special secondary credential in home economics may be obtained with a minimum amount of additional work in the field.

Home Arts Curriculum

The home arts curriculum, designed around the general major, leads to the A.B. degree in arts and sciences. Courses in the major are in addition to 45 units in general education courses. A minor is not required. Lower division requirements: Home Economics 1, 3, 15, and 70; Sociology 50 and 51; and six lower division units selected from a third field with the approval of the departmental adviser. Upper division requirements: 15 upper division units in home economics selected with the approval of the departmental adviser; 9-12 upper division units in sociology; and 9-12 upper division units in the third field, all courses to be selected with the approval of the departmental adviser as part of a general major.

Lower Division Courses

***1. General Home Arts (3) I, II**

A general education course in family life education. Consideration of necessary preparation for marriage with emphasis on a stable, happy democratic family life; family budgets and money management; finding a home to buy, build or rent; child care, proper training and guidance; home safety. Open to men and women.

2. Orientation to Home Economics as a Profession (1) I, II

Introduction to the opportunities and requirements in various professional fields for home economists.

***3. Food and Nutrition (3) I, II**

Selection, purchase, and serving of meals with a consideration of nutritional needs of the family groups, food habits, and social customs; management problems. One lecture and two laboratory periods per week. (Formerly Home Economics 5.)

***4A. General Nutrition (2) I, II**

Practical problems of nutrition, including food requirements, food selection, and food habits. The relation of nutrition to health. Two lectures per week. Open to both men and women, except home economics majors. Maximum credit in Home Economics 3 and 4A is four units. (Formerly Home Economics 61A).

4B. Nutrition Laboratory (1) II

Principles of nutrition applied to food preparation, meal planning, and special diets. Limited to students admitted to the nursing curriculum. One three-hour laboratory period per week. (Formerly Home Economics 61B.)

***15. Clothing and Textiles (3) I, II**

Commercial patterns and their adaptation; fitting and construction, primarily with cotton material. Selection and care of textiles. Wardrobe planning and buying practices. Good grooming. (Formerly Home Economics 10.)

40. Budgeting the Family Income (2) I, II

Family buying problems; finance planning, accounting; consumer credit, investments, and control of property.

41. Home Care of the Sick (1) II

Family health; mother and baby care; safety in the home.

42. Problems of Family Living (2) I, II

The activities of the family and the functions of the homemaker in modern society; the individual's contribution to successful family living.

43. Household Equipment (2) I

Selection, methods of operation, and care of household appliances. The testing of various types of equipment for safety, efficiency, and cost of operation. Efficient kitchen arrangement. (Formerly Home Economics 55.)

***70. Children in the Home (2) I, II**

Development during the prenatal period, first 10 years. Nutrition, physical development, and family influences on the young child. Observation required. (Formerly Home Economics 170.)

Upper Division Courses

100. Advanced Foods (3) I

Fundamentals and practices of scientific food preparation. Development of standards in food preparation, meal planning, and service. Prerequisites: Home Economics 3 and Chemistry 2B.

101. Family Meals (3) II

Planning, preparing, and serving of attractive, well-balanced meals for different income levels and for various occasions. Not open to home economics majors. (Formerly Home Economics 105.)

102. Advanced Nutrition and Dietetics (3) II

Principles of nutrition and dietetics as related to individuals and family groups. Prerequisite: Home Economics 100.

115. Advanced Clothing (3) I, II

Fitting and construction processes applied to wool, silk, and synthetics, emphasizing fundamental principles of handling. Prerequisite: Home Economics 15. (Formerly Home Economics 11.)

116. Advanced Clothing Design (3) II

Principles of tailoring; planning and construction of coats and suits. Prerequisite: Home Economics 115. (Formerly Home Economics 100.)

117. Clothing Selection (3) I

Appropriate clothing for the individual and the family. Basic art principles, fashion trends, history of costume, buying practices; current legislation in textiles and clothing. (Formerly Home Economics 101.)

118. General Textiles (2) II

Factors involved in selecting weaves, fabrics, colors, and finishes for home decoration and clothing; relationships to durability and cost. Not open to marketing majors. (Formerly Home Economics 161.)

119A. Merchandise Analysis—Textiles (2) I

Properties, uses, selection, and care of textiles. Not open to home economics majors. (Formerly Home Economics 160A.)

119B. Merchandise Analysis—Nontextiles (2) II

Properties, uses, selection, and care of metals, glass, rubber, fur, enamels, and plastics. Not open to home economics majors. (Formerly Home Economics 160B.)

130. Family Housing (2) I

Choosing and furnishing a home from the standpoint of economy, comfort, and beauty. One lecture and one three-hour laboratory period per week. Prerequisites: Art 6A and Home Economics 40.

131. Home Furnishing Laboratory (2) I, II

Simple upholstering techniques; finishing furniture and interior woodwork. One lecture and one three-hour workshop period per week. Prerequisites: Home Economics 15 and 130. Home Economics 130 may be taken concurrently. Student supplies his own tools, furniture, and fabrics.

***135. Marriage and the Family (3) I, II** (Same course as Sociology 135)

Background factors predictive of happy and successful marriages; family forms in other cultures; principal areas of adjustment in marriage; parent-child problems; the changing adolescent; causes and results of divorce; the family of tomorrow. Not open to students with credit for Sociology 35 or 135 or other course in Marriage and the Family.

***150. Home Management (3) I, II**

Efficient management of the home; family cooperation, establishment of goals, and productive use of money, time and energy. Open to both men and women.

151. Home Management Laboratory (3) I, II

Five weeks' residence in a family-size unit. Practical applications and evaluative experience in home management and family living. Prerequisites: Home Economics 100, 150, permission of instructor and departmental approval.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

170. Child Development Laboratory (2) II

Observation of young children; participation in child and parent education. Discussion one hour, observation and participation two hours per week. Prerequisite: Home Economics 70 or permission of instructor.

180. Demonstration Methods (1) II

Organizing materials and acquiring techniques for demonstrations; observation and evaluation of professional demonstrations. Prerequisite: Nine units in home economics courses. (Formerly Home Economics 120.)

181. Materials and Techniques for Teaching Home Economics (2) II

Development and use of audio-visual and other instructional materials. Prerequisite: Education 100B-HE or concurrent registration.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: Permission of instructor.

INDUSTRIAL ARTS

IN THE DIVISION OF PHYSICAL SCIENCES

Courses in industrial arts lead to the following objectives: (1) a major or minor in arts and sciences; (2) a teaching major or minor for several of the teaching credentials; and (3) general education and individual interests. Many of the courses will prove valuable to students desiring practical shop experience on an elective basis. A master's degree in industrial arts is also available to teachers.

Major

A *major in arts and sciences* is offered in *industrial arts*. Requirements in the major are in addition to the 45 units required in general education courses. A minor field is not required.

Specific requirements for the major: Lower division: Industrial Arts 11 will be taken at the beginning of the major. Five courses to be selected from Industrial Arts 21, 31, 51, 61, 71, or 81 (17 units total in lower division). Art 6A is a prerequisite for certain upper division courses. It may be counted toward general education requirements in the area of literature, philosophy, and the arts. Upper division: A minimum of 24 upper division units to include 9 units in *each of two* of the following areas: industrial drawing, general metalworking, general woodworking, electricity-radio, transportation, or graphic arts; and 6 units selected from the areas just mentioned, or from handicraft courses, photographic courses, or the general shop sequence.

A *teaching major in industrial arts* is offered for the special secondary credential and the general secondary credential. For a description of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *industrial arts*. The minor consists of 20 units in industrial arts to include Industrial Arts 11, 21, and 121, and one lower division and one upper division course in *each of two* of the following areas: general woodworking, general metalworking, electricity-radio, transportation, and graphic arts. Electives should be chosen in consultation with the chairman of the department.

A *teaching minor* in *industrial arts* is offered for the junior high, special secondary, general elementary, and kindergarten-primary credentials.

Lower Division Courses

***5. General Education Shop (3) I, II**

A general education course in practical arts utilizing the tools and materials of the general metalworking area. Activities include individual projects, field trips, and audio-visual materials.

***6. General Education Shop (3) I, II**

A general education course in practical arts utilizing the tools and materials of industrial arts. Activities include individual projects, field trips, and audio-visual materials.

11. Orientation to the Industrial Arts Profession (2) I, II

Professional requirements and modern trends in industrial arts education. Problems of teaching and shop organization in the various fields of specialization, directed observation. Required of all industrial arts majors during their first semester.

21. Industrial Drawing (3) I, II

Development of the skills of industrial drawing. Experience in sketching, architectural drafting, mechanical drawing, sheetmetal layout, design, planning, blackboard drawing, mapping and other forms of graphic presentation.

31. General Metalworking (3) I, II

Development of the skills of general metal working. Experience in machine shop practice, welding, bench metal, art metal, forge, foundry and sheetmetal.

51. General Woodworking (3) I, II

Development of the skills of general woodworking. Experience in cabinetmaking, woodturning, patternmaking, carpentry, boatbuilding, and finishing.

61. Electricity-Radio (3) I, II

Development of the skills for and the understandings of the electricity-radio area. Experience with electrical and radio principles and their application.

71. Transportation (3) I, II

Development of the skills of transportation machinery maintenance. Experience in the maintenance of equipment for land, sea and air transportation and an understanding of the mechanical principles involved.

81. Graphic Arts (3) I, II

Development of the skills of graphic arts. Experience in hand composition, press work, and other activities such as bookbinding, photography, silk screen, relief and intaglio printing and other duplicating processes. An understanding of the composition of papers and inks.

***85. Introduction to Photography (3) I, II**

A consideration of photographic optics and chemistry; nature of light and image formation; photographic emulsions, exposure and development. Composition and lighting. Two lectures and one three-hour laboratory per week. May be counted toward general education requirements under practical arts, unless used as part of the major in industrial arts.

Upper Division Courses

101. Handicrafts for Teachers (2) I, II

For industrial arts or recreational students who desire to teach handicrafts. Skills in handicrafts are emphasized and directed toward the instructional process. Prerequisites: permission of the instructor and some previous shop experience.

102. Materials and Techniques for Teaching Handicrafts (3) I, II

More advanced techniques of handicrafts. Development of audio-visual aids, projects, and resource material for handicrafts. Physical setting, organization, and other pertinent problems. A course of instruction is prepared. Prerequisite: Industrial Arts 101.

105-S. Construction Activities for Teachers (3) Summer

Use of common hand tools in construction of teaching aids. Preparation of materials for classroom use in arithmetic, reading, science, social studies, and other curriculum areas. Not open to Industrial Arts majors.

111. General Shop for Teachers (2) I, II

For industrial arts students who desire to teach general shop. Skill in the general shop is emphasized and directed toward the instructional process. Prerequisites: permission of the instructor and some previous shop experience.

112. Materials and Techniques for Teaching General Shop (3) I, II

More advanced techniques for the general shop. Development of audio-visual aids, projects, and resource material for teaching general shop. Physical setting, organization, and other pertinent problems. A course of instruction is prepared. Prerequisite: Industrial Arts 111.

121. Industrial Drawing (3) I, II

Further experience in sketching, architectural drafting, mechanical drawing, sheetmetal layout, design, planning, blackboard drawing, mapping, and other forms of graphic presentation. A high level of performance is expected. Prerequisite: Industrial Arts 21.

122. Industrial Drawing for Teachers (3) I, II

For industrial arts students who desire to teach industrial drawing. Advanced skills are developed and directed toward the instructional process. Emphasis is placed on the junior and senior high school program. Prerequisites: Industrial Arts 121 and Art 6A. Not open to students with credit for Industrial Arts 122A or 122B.

123. Materials and Techniques for Teaching Industrial Drawing (3) I, II

More advanced techniques of industrial drawing. Development of audio-visual aids, projects, and resource material for industrial drawing. Physical setting, organization, and other pertinent problems. A course of instruction is prepared. Prerequisites: Industrial Arts 122 and Education 184A.

131. General Metalworking (3) I, II

Further experience in machine shop practice, welding, bench metal, art metal, forge, foundry, and sheetmetal. A high level of performance is expected. Prerequisite: Industrial Arts 31.

132. General Metalworking for Teachers (3) I, II

For industrial arts students who desire to teach metalworking. Advanced skills are developed and directed toward the instructional process. Emphasis is placed on the junior and senior high school program. Prerequisites: Industrial Arts 131 and Art 6A. Not open to students with credit for Industrial Arts 132A or 132B.

133. Materials and Techniques for Teaching General Metalworking (3) I, II

More advanced techniques of metalworking. Development of audio-visual aids, projects and resource material for metalworking. Physical setting, organization and other pertinent problems. A course of instruction is prepared. Prerequisites: Industrial Arts 132 and Education 184A.

151. General Woodworking (3) I, II

Further experience in cabinetmaking, woodturning, patternmaking, carpentry, boatbuilding, and finishing. A high level of performance is expected. Prerequisite: Industrial Arts 51.

152. General Woodworking for Teachers (3) I, II

For industrial arts students who desire to teach woodworking. Advanced skills are developed and directed toward the instructional process. Emphasis is placed on the junior and senior high school program. Prerequisites: Industrial Arts 151 and Art 6A. Not open to students with credit for Industrial Arts 152A or 152B.

153. Materials and Techniques for Teaching General Woodworking (3) I, II

More advanced techniques of woodworking. Development of audio-visual aids, projects, and resource material for woodworking. Physical setting, organization, and other pertinent problems. A course of instruction is prepared. Prerequisites: Industrial Arts 152 and Education 184A.

161. Electricity-Radio (3) I, II

Further experience with electrical and radio principles and their applications. A high level of performance is expected. Prerequisite: Industrial Arts 61.

162. Electricity-Radio for Teachers (3) I, II

For industrial arts students who desire to teach electricity-radio. Advanced skills are developed and directed toward the instructional process. Emphasis is placed on the junior and senior high school program. Prerequisites: Industrial Arts 161 and Art 6A. Not open to students with credit for Industrial Arts 162A or 162B.

163. Materials and Techniques for Teaching Electricity-Radio (3) I, II

More advanced techniques for electricity and radio. Development of audio-visual aids, projects, and resource material for electricity and radio. Physical setting, organization, and other pertinent problems. A course of instruction is prepared. Prerequisites: Industrial Arts 162 and Education 184A.

171. Transportation (3) I, II

Further experience in the maintenance of equipment for land, sea, and air transportation, and development of an understanding of the mechanical principles involved. A high level of performance is expected. Prerequisite: Industrial Arts 71.

172. Transportation for Teachers (3) I, II

For industrial arts students who desire to teach transportation. Advanced skills are developed and directed toward the instructional process. Emphasis is placed on the junior and senior high school program. Prerequisites: Industrial Arts 171 and Art 6A. Not open to students with credit for Industrial Arts 172A or 172B.

173. Materials and Techniques for Teaching Transportation (3) I, II

More advanced techniques of transportation machinery maintenance. Development of audio-visual aids, projects, and resource material for transportation. Physical setting, organization, and other pertinent problems are discussed. A course of instruction is prepared. Prerequisites: Industrial Arts 172 and Education 184A.

181. Graphic Arts (3) I, II

Further experience in hand composition, press work, and other activities such as bookbinding, photography, silk screen, relief and intaglio printing, and other duplicating processes. A high level of performance is expected. Prerequisite: Industrial Arts 81.

182. Graphic Arts for Teachers (3) I, II

For industrial arts students who desire to teach graphic arts. Advanced skills are developed and directed toward the instructional process. Emphasis is placed on the junior and senior high school program. Prerequisites: Industrial Arts 181 and Art 6A. Not open to students with credit for Industrial Arts 182A or 182B.

183. Materials and Techniques for Teaching Graphic Arts (3) I, II

More advanced techniques of graphic arts. Development of auudio-visual aids, projects, and resources material for graphic arts. Physical setting, organization, and other pertinent problems. A course of instruction is prepared. Prerequisites: Industrial Arts 182 and Education 184A.

185. Photography for Teachers (3) I

Designed for more mature students to learn photographic skills useful in teaching.

186. Advanced Photography (3) II

A consideration of advanced negative control, projection printing techniques, composition and editorial content, architectural and illustrative photography, and flood photoflash techniques. Two lectures and three hours of laboratory per week. Prerequisite: Industrial Arts 85 or equivalent.

190. Experimental Shop (1 or 2) I, II

Individual shop work on complex projects on an experimental basis. Prerequisite: permission of the instructor. May be repeated with permission of the instructor.

193. Industrial Arts Organization and Management (2) I, II

Study of the organization of Industrial Arts in secondary schools, review of project requirements and methods of developing student participation in shop management. Two lectures per week.

194. Recent Trends in Industrial Arts Education (2) I, II

Survey of current trends and practices in the field of Industrial Arts in Secondary Education. There will be opportunity for individual work on related problems of interest to member of the class. Two lectures per week.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

200. Seminar (3) I, II

An intensive study of one phase of industrial education: (a) development of the industrial arts curriculum; (b) shop organization and management; (c) supervision and administration; (d) evaluation; (e) problems of shop planning; (f) history and philosophy of industrial education. May be repeated with new materials for additional credit.

201. Advanced Teaching Problems (3) I, II

Materials and advanced techniques of teaching specific activity areas, such as (a) industrial drawing; (b) general metalworking; (c) general woodworking; (d) electricity-radio; (e) transportation; (f) graphic arts; (g) photography; (h) comprehensive general shop. Stress on project design and visual materials. Prerequisites: teaching experience in area selected and permission of instructor. May be repeated with new materials for additional credit.

290. Bibliography (1) I, II

Exercise in the use of basic reference books, professional literature, and specialized bibliographies, preparatory to the writing of a master's thesis.

298. Special Study (1-6) I, II

Individual study. Prerequisite: Permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3) I, II

Guidance in the preparation of a project or thesis in industrial arts for the master's degree.

INTER-AMERICAN RELATIONS

IN THE DIVISION OF SOCIAL SCIENCES

This curriculum, designed around the general major, provides (1) a basis for a more effective understanding of the opportunities and problems of international relations in the western hemisphere; (2) facilities for a basic education and training for a business or professional career involving international relations; (3) undergraduate preparation for the comprehensive examinations required for appointment in the Foreign Service, Department of State.

High school students preparing to enter this area of Foreign Service should include in the high school program three years in one foreign language, preferably Spanish.

Students should consult with the adviser in Inter-American Relations regarding an appropriate program of studies.

JOURNALISM

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major

A *major in arts and sciences* is offered in *journalism* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division: required in the major: Journalism 50, 51A-51B, Business 2A (or equivalent performance in typing). Recommended: Economics 1A-1B, English 20 or General Language 20, English 61, Speech Arts 81A or 81B. Upper division requirements: 24 upper division units in journalism to include Journalism 102 and 151. Recommended elective: Business 182. A minor is not required.

Minor

A *minor in arts and sciences* is offered in *journalism.* The minor consists of 15 to 22 units in journalism, nine units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in journalism.

Lower Division Courses

49. Introduction to Mass Communications (3) I

A survey of the work of mass media, their interrelationships, and the services they perform for society; common problems and reponsibilities of the mass media; training and background needed in different media.

50. News and Feature Photography (2) I, II

An elementary course designed primarily for students of journalism and public relations; experience with professional photographic equipment and film processing; contact and projection printing; emphasis on composition and news value of pictures. One hour lecture and three hours laboratory.

51A. Elements of Journalism (3) I

Theory of news writing; introduction to the newspaper as an institution in modern society. Prerequisites: sophomore standing and grade of B in freshman composition, or consent of instructor; and Business 2A (may be taken concurrently) or equivalent, with 30-word-per-minute performance.

51B. News Gathering and Reporting (3) II

Practice in writing news copy, both for class criticism and for publication in *The Aztec.* Prerequisite: grade of C or better in Journalism 51A.

53. Advanced News and Feature Photography (2) I

Continuation of Journalism 50. Prerequisite: Journalism 50.

92. Newspaper Production (1-3) I, II

Special work in journalism by arrangement with the instructor. Includes reporting, editing, taking and processing pictures, working with the printer, proofreading in production of *The Aztec*. Laboratory periods required. Total credit in Journalism 92, 93, 192, and 193 limited to eight units.

93. Yearbook and Magazine Production (1-3) I, II

Special work in yearbook and magazine production by arrangement with the instructor. Includes editing and photographic work on Del Sud and campus magazines. Laboratory periods required. Total credit in Journalism 92, 93, 192, and 193 limited to eight units.

Upper Division Courses

101. Interpretative Writing (3) II

Practice in gathering material and writing articles for specialized areas, with emphasis on the business press. Production of eight articles and marketing of at least one article required. Prerequisite: junior standing and permission of instructor.

102. Law of Mass Communications (3) II

Study of libel, defamation, privacy, censorship, advertising laws, postal regulations, and constitutional guaranties affecting press, radio, television; rights and responsibilities of communicators in reporting public affairs.

103. Picture Editing (2) II

Editorial problems of newspaper and magazine illustration; picture selection, cropping, captioning, layout; the picture story; use of charts, diagrams, cartoons, maps; picture sources. Students will receive credit for work on the student publications.

104. Radio and Television News (3) I

Gathering, writing, and editing news in special forms required by radio and television; processing wire service copy, still pictures, and kinescopes; filming, editing, and scripting news on motion pictures; using recorders to report special events.

105. Editorial Writing (3) I

Training in the principles and policies of editorial composition for mass communications media.

106. Creative Writing (3) I (Same course as English 106)

A writing workshop in which students are given opportunity to criticize each other's work. Emphasis on narrative and description, but freedom to pursue whatever writing forms may interest the student most. May be taken a second time with new material. Not open to students with credit for English 106.

107. Technical Writing (3) II

Reporting technical developments in nontechnical language. A course in writing and editing primarily for nonmajors in journalism.

117. History of Mass Communications (3) I

American journalism from colonial times to the present, with special attention to radio and other mass media which have entered the news and entertainment field; the relation of their development to society.

121. Current Problems in Mass Communications (3) II

Forces affecting mass communications today: government restrictions, economics, pressure groups, censorship, mechanical developments, interrelationships of the media and society; professional ethics.

122. Public Opinion Measurement (3) II (Same course as Psychology 122)

The history, methods, and problems of public opinion and attitude measurement. Emphasis will be placed upon the polling of consumers and voters. Students will be given field experience. Not open to students with credit for Psychology 122.

132. Propaganda and Public Opinion (3) II
(Same course as Political Science 122)

A study of the forces which mold the American public mind, the practice of propaganda, a description and analysis of public relations, pressure groups and their effect in American public life. Not open to students with credit for Political Science 122.

142. State Government (3) II (Same course as Political Science 142)

A study of the political structure and its operation used in the carrying on of the functions exercised by the states; state-federal relations; state-local government relations; particular emphasis on California government. This course meets the graduation requirement in California state and local government. Not open to students with credit for Political Science 142.

143. Municipal and County Government (3) I
(Same course as Political Science 143)

A study of the organization and its operation used to carry into effect the functions assigned to local governmental units; particular emphasis upon local government in California. This course meets the graduation requirement in California state and local government. Not open to students with credit for Political Science 143.

144. Reporting of Public Affairs (3) II

Coverage of the city hall, courthouse, police headquarters, federal agencies, courts, and other public and political centers. Prerequisites: Journalism 51A and 51B and 102, or permission of instructor. Recommended Journalism 142 and 143, or Political Science 142 and 143.

151. Advanced Editing and Reporting Techniques (3) I

Editing copy, writing headlines, making up pages, handling telegraph copy. Practice in specialized forms of journalistic writing. Laboratory periods required. Prerequisite: Journalism 51A-51B.

152. High School Journalism (3) II

Methods of conducting high school journalism classes. Editorial, business and mechanical aspects of school publication work, with emphasis on copy editing, headline writing and layout. Not open to journalism majors. Prerequisite: grade of C or better in Journalism 51A and approval of instructor.

162. Magazine Fiction (3) I (Same course as English 162)

Coaching in constructing and writing short stories for commercial publications. Admission with consent of instructor. Not open to students with credit for English 162.

166. Honors Course (Credit to be arranged) I, II

Special study open to members of the Honors Program in journalism. Refer to the Honors Program.

180. Public Relations (3) I (Same course as Business 180)

Principles, methods, and objectives in the field of public relations; evaluation of the "publics" of institutions and industry; case studies of public relations problems. Prerequisites: Journalism 51A-51B, or permission of the instructor. Not open to students with credit for Business 180.

183. Problems in Public Relations (3) II (Same course as Business 183)

Current public relations problems of industry, public agencies, and other institutions. Prerequisite: Journalism 180 or Business 180. Not open to students with credit for Business 183.

184. Writing for Radio and Television (3) II (Same course as Speech Arts 184)

Scripts, documentaries, music, continuity for each program type. Correlates writing with radio and television acting and announcing styles. Program formats. Prerequisites: Speech Arts 81A or equivalent. Not open to students with credit for Speech Arts 184.

185. Advertising Copy and Layout (2) I (Same course as Business 185)

Introduction to principles and techniques of copy writing; types of copy; preparation of layouts; mechanical methods employed by the artist, engraver and printer; legislation and regulations affecting advertising claims. Prerequisite: Business 27, or consent of instructor. Not open to students with credit for Business 185.

191A-191B. Internship in Journalism (1-3) I, II

Prearranged and supervised work on local magazines, city and county newspapers, radio and television stations, and on public relations, publicity, and advertising staffs of civic and business groups. Prerequisites: Journalism 51A and 51B and permission of instructor. Maximum credit six units.

192. Newspaper Production (1-3) I, II

Special work in journalism by arrangement with the instructor. Includes reporting, editing, taking and processing pictures, working with the printer, proofreading in production of *THE AZTEC*. Laboratory periods required. Total credit in Journalism 92, 93, 192 and 193 limited to eight units.

193. Yearbook and Magazine Production (1-3) I, II

Special work in yearbook and magazine production by arrangement with the instructor. Includes editing and photographic work on *DEL SUD* and campus magazines. Laboratory periods required. Total credit in Journalism 92, 93, 192, and 193 limited to eight units.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

LABORATORY TECHNIQUE

IN THE DIVISION OF LIFE SCIENCES

The laboratory technique curriculum is offered with the B.S. degree. This curriculum, with modifications for the types of licensures, is provided to satisfy the academic requirements to qualify for the examination given by the State of California Public Health Department for Public Health Bacteriologist, Clinical Laboratory Technician, and Medical Technologist. If the curriculum outlined by this College is followed, only six months of apprenticeship are required to complete the qualifications for the licensing examinations for Public Health Bacteriologist and Clinical Laboratory Technician. Five years of experience as a Clinical Laboratory Technician are necessary to qualify for the examination for licensure as a Medical Technologist.

The major in laboratory technique is in addition to 45 units in general education courses, except that 12 units of science courses in the major field may be counted as general education in natural science. A minor is not required.

Specific requirements for the major: Lower division (including courses in General Education, but required for licensure): Chemistry 1A-1B, *Chemistry 5A, Biology 3 and 4 or Zoology 1, Bacteriology 1, Biology 15 (or equivalent), Zoology 8A-8B, *Physics 2A and 3A. Upper division: 36 upper division units, including Chemistry 101A, *Chemistry 114A-114B, Bacteriology 102, 103, 104, Biology 134, 189, *Zoology 109, Zoology 128, and courses selected from Bacteriology 105, 107, Zoology 126 and 108 to complete the major.

Students should consult with the adviser in the Laboratory Technique Curriculum for selection and arrangement of courses.

LANGUAGE ARTS

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major

A *language arts major in arts and sciences* is offered for the A.B. degree to students who have been admitted to the general secondary credential program in teacher education and provided that a minimum of eight units in professional education courses be completed by date of degree candidacy. Requirements for the major are in addition to 45 units in general education courses. A minor selected from an appropriate teaching minor for the general secondary credential is required of students taking this major. A minimum of 15 units in this minor, six units of which must be in upper division courses, must be completed for the A.B. degree. The additional units required for the credential may be completed either in undergraduate or postgraduate work.

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* These courses are not required for the Public Health Bacteriologist license.

Lower division requirements for the major: Six units selected from English 50A-50B, or 52A-52B, or 60A-60B (or two upper division courses may be substituted, selection to be made from English 116A-116B, or 118A-118B, or 119A-119B, or 120A-120B, or 126A-26B, or 143A-143B); Journalism 51A; Speech Arts 60A, or 60B, or 55A, or 55B; Speech Arts 81A or 81B. Upper division requirements: 27 units to include the following courses: English 192; English 106 or 191; English 131, or 132, or 133, or 134; English 117A, or 117B, or 152A, or 152B; Journalism 152; Speech Arts 108, 159, and 176; Speech Arts 191, or 192A, or 192B. If lower division English sequence is taken in American Literature, the upper division course work in literature should be taken in other areas.

A *teaching major in language arts* is offered for the general secondary school credential. For a statement of requirements, refer to this credential.

Minor work is not offered in language arts.

LIBRARY SCIENCE
IN THE DIVISION OF SOCIAL SCIENCES

Major or *minor* work is not offered in library science.

Lower Division Courses

***10. Use of the Library (2) I, II**

The chief object is to give a working knowledge of some of the resources of the library which every teacher and student should understand—the decimal classification, the card catalog, periodical indexes, and the most important reference books, together with some instruction in the preparation of bibliographies. The course will be a requirement of those students added to the library's staff of student assistants, although it will not prepare the student to become a librarian. A general education course in practical arts.

LIFE SCIENCE
IN THE DIVISION OF LIFE SCIENCES

Major

A *major in arts and sciences* is offered in *life science* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Botany 1 and Zoology 1, or Biology 3 and 4; Chemistry 1A-1B or 2A-2B; Biology 15; Physics 2A-2B, or, with the approval of the departmental adviser, high school physics and Geology 2 and Physical Science 1. Upper division requirements: A minimum of 24 upper division units in bacteriology, biology, botany, and zoology including Bacteriology 101, Biology 110, 155, and 161. Six units may be from an approved related field. The plan for this major must be with the approval of the Chairman of the Division of Life Sciences. A minor is not required of students majoring in life science.

A *major in arts and sciences* is offered in *life science* for the B.S. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Bacteriology 1 or 101, Botany 1, Zoology 1, Chemistry 1A-1B or 2A-2B, Physics 2A-2B. Upper division requirements: 36 upper division units in bacteriology, biology, botany, and zoology, or 27 units in these fields with nine units in a related field. The plan for this major must be with the approval of the Chairman of the Division of Life Sciences. A minor is not required of students majoring in life science.

Note: Twelve units in natural science courses in the major for the A.B. or B.S. degree may be applied toward requirements in general education natural science courses.

A *teaching major in life science and general science* is offered for the general secondary school credential and a *teaching major in general science* is offered for the junior high school credential. For statement of requirements, refer to these credentials.

Other Curricula in the Life Sciences

Within the life science majors, curricula are offered for the fields of entomology, fish and game, plant quarantine, and wild life. Requirements for these curricula are the same as for the B.S. degree in zoology or in botany; the specialization for a particular occupation lies within the upper electives of the B.S. degree program.

Students in high school planning to enter any of these life science curricula should include in the high school program the following subjects: Elementary algebra, plane geometry, intermediate algebra, trigonometry, chemistry, and physics. Three years of French or German recommended.

Students planning to specialize within the area of the life sciences should consult with the departmental adviser in selection and arrangement of courses.

Minor

A *minor in arts and sciences* is offered *in life science*. The minor consists of 15 to 22 units in life science to include Biology 3 and 4, or the equivalent, and a minimum of nine units in courses carrying upper division credit selected with approval of the chairman of the division.

A *teaching minor in life science and general science* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

MATHEMATICS

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *major in arts and sciences* is offered in *mathematics* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Mathematics C and D (unless exempted by examination); Mathematics 3A-3B and 4A. Recommended: Business 2, Engineering 1A, 21; Physics 4A-4B or Physics 2A-2B, 3A-3B. A reading knowledge of French or German is desirable. Upper division requirements: A minimum of 24 upper division units in mathematics to include Mathematics 117 (unless taken as Mathematics 4B in the lower division); 105 or 106 or 107, 111, 119, 121 (except that 119 and 121 are not specifically required of teacher credential candidates). Six units of the remaining nine units may be selected from upper division courses in related areas with the approval of the department. A minor is not required, but is recommended.

A *teaching major* is offered in *mathematics* for the junior high school credential and for the general secondary credential. For specific information, refer to the outline of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in *mathematics*. The minor consists of 15 to 22 units in mathematics, six units of which must be in courses carrying upper division credit. Courses should be selected in consultation with the departmental representative.

A *teaching minor* is offered in *mathematics* for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

X. Basic Mathematics (3) I, II

Fundamentals of mathematics with applications to everyday problems. Required of all students failing the competency examination in mathematics. Not open for credit to students passing this examination. May not be used in the major or minor.

***A. Fundamentals of Algebra (3) I, II**

General ideas and applications of algebra.

***B. Plane Geometry (3) I, II**

Fundamentals of plane Euclidean geometry developed by both inductive and deductive processes. Prerequisite: Mathematics A, or equivalent.

***C. Intermediate Algebra (3) I, II**

A continuation of the study of algebra, including quadratic equations, binomial theorem, progressions and logarithms. Prerequisite: Mathematics A, or qualifying by examination.

***D. Trigonometry (3) I, II**

Plane trigonometry with special attention to the analytical aspects. Prerequisites: Mathematics B and C, or their equivalents.

***G. Mathematics for General Education (3) I, II**

Basic concepts of arithmetic, algebra, and geometry with applications. Recommended for students whose scores on the competency examination, while exempting them from Mathematics X, indicate a need for further training in mathematics. A general education course in mathematics. May not be used in the major or minor.

S. Theory and Use of the Slide Rule (1) I, II

Practice in performing the fundamental operations of the slide rule. Prerequisites: Math A and B, or equivalent.

1. Algebra and Trigonometry (3) II (Not offered in 1955-56)

Review of algebra and trigonometry. Further study of identities, graphs, solution of algebraic and trigonometric equations, determinants, and mathematical proofs. Prerequiste: Two years of high school algebra and trigonometry.

***3A. Analytic Geometry (3) I, II**

An integration of algebraic and geometric concepts, with emphasis on the straight line, conic sections, and coordinate transformations. Prerequisite: Math D with a grade of C or better, or qualifying by examination.

***3B. First Course in Calculus (3) I, II**

Introduction to differential and integral calculus with applications. Prerequisite: Mathematics 3A, with a grade of C or better.

4A. Second Course in Calculus (3) I, II

Differentiation, integration, and applications. Prerequisite: Mathematics 3B, with a grade of C or better.

4B. Third Course in Calculus (3) I, II

Infinite series, partial differentiation, successive integration and applications. Prerequisite: Math 4A, with grade of C or better. (Solid geometry is recommended.) Not open to students with credit for Math 117.

***7A. Mathematical Analysis (3) I**

Designed for students who do not intend to prepare for a professional career in physical science or in engineering. Consideration is given to the processes and applications of algebra and trigonometry. Prerequisite: High school algebra and plane geomerty. Students with credit for Mathematics 1 will not receive credit for Mathematics 7A.

***7B. Mathematical Analysis (3) II**

A continuation of Mathematics 7A including the concepts and applications of analytic geometry and an introduction to the calculus. Prerequisite: Mathematics 7A. Students with credit for Mathematics 3B will not receive credit for Mathematics 7B.

12. Elementary Statistics (3) II

Tabular and graphical presentation, measures of central tendency and variability, analysis of times series, linear correlation coefficient. Applications from the fields of biology, economics, education, engineering and psychology. Prerequisite: Math A, or equivalent.

Upper Division Courses

***104. History of Mathematics (3) II**

History of mathematics down to early modern times.

105. College Geometry (3) II

A synthetic treatment of the points and lines associated with triangles and quadrilaterals, similarity, inversion, ruler and compass construction, etc. Highly recommended for all teachers of high school geometry. Prerequisite: Mathematics 3B or 7B.

106. Projective Geometry (3) I

Concurrence of lines, collinearity of points and other properties of figures not altered by projections; construction and study of ellipses, hyperbolas, and parabolas by means of projections. Prerequisites: Mathematics 3B or 7B and permission of instructor.

107. Non-Euclidean Geometry (3) I

History of attempts to prove the fifth postulate; emphasis on plane synthetic hyperbolic geometry; brief treatment of other types of non-Euclidean geometry. Prerequisite: Mathematics 3B or 7B.

111. Theory of Algebraic Equations (3) II

Determinants, complex numbers, and theory of algebraic equations. Prerequisite: Mathematics 3B or 7B.

112. Analytic Geometry of Space (3) II

The coordinate systems in space; lines, planes, and quadric surfaces; applications. Prerequisite: Mathematics 4A.

117. Intermediate Calculus (3) I, II

Essentially the same as Mathematics 4B. Additional special work for advanced students may be assigned. Prerequisite: Mathematics 4A, with a grade of C or better. Not open for credit to students with credit for Math 4B.

118A. Advanced Mathematics for Engineering Students (3) I

Selected topics from ordinary differential equations, with applications; hyperbolic, elliptic, Bessel and gamma functions, Fourier series and integrals, electromechanical analogies, the Laplace transform, and partial differential equations. Prerequisite: Mathematics 117, or its equivalent.

118B. Advanced Mathematics for Engineering Students (3) II

A continuation of Mathematics 118A. Prerequisite: Math 118A.

119. Differential Equations (3) I

Ordinary differential equations with applications to geometry, physics, and chemistry. Prerequisite: Mathematics 117, or its equivalent.

121. Advanced Calculus (3) II

Fundamental concepts and selected topics. Prerequisite: Mathematics 117, or its equivalent.

124. Vector Analysis (3) I

Vector algebra, differentiation of vectors, gradient, divergence, and curl. Applications to geometry and physics. Prerequisite: Mathematics 117, or its equivalent.

134. Probability (3) II

Definitions, computation of probability by enumeration of cases, discrete and continuous chance variables, density functions, moments, limit theorems, selected distributions. Prerequisite: Mathematics 117, or its equivalent.

140A. Mathematical Statistics (3) I

Graphical and arithmetical characterization of observed frequency distributions, moments, use of normal curve, curve fitting, correlation, etc. Prerequisite: Mathematics 117, or its equivalent.

140B. Mathematical Statistics (3) II

Theoretical discrete and continuous distributions, multiple and partial correlation, large and small sample theory including student's T, Chi-square, and the F distributions with applications. Prerequisite: Mathematics 140A.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

177. Quality Control (3) (Same course as Business 177 and Engineering 177)

Statistical techniques; tolerances and variants; standards; organization for inspection; inspection methods for raw materials, work in process, and finished products; control of inspection devices. Not open to students with credit for Business 177 or Engineering 177. Prerequisites: Business 121 and 173 or equivalent, and either Economics 140 or Mathematics 12.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

200. Seminar (2 or 3) I, II

An intensive study of one phase of mathematics, such as functions of a real variable, functions of a complex variable, partial differential equations, theory of numbers, matrices. May be repeated with new subject matter for additional credit.

290. Bibliography (1) I, II

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

299. Thesis or Project (3) I, II

Guidance in the preparation of a project or thesis for the master's degree.

MUSIC

IN THE DIVISION OF FINE ARTS

Major

A *major in arts and sciences* is offered in *music* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses, except that nine units of music of courses in performance groups may be counted toward general education requirements in the area of literature, philosophy, and the arts. Students majoring in music are not required to complete a minor. Several plans of study are available with varying degrees of emphasis on performance, history and literature, creative activity, and teaching.

The music curricula are designed to fulfill the needs of all students: (1) those who have professional ambitions in music performance, or seek a foundation for graduate study leading to college or university teaching, (2) those who are preparing for one of the several state teaching credentials with music as either a major or minor, (3) those whose major professional interest is in another department and are seeking musical study as a minor, and (4) those who are interested in music as an elective study area for the enrichment of their cultural background.

GENERAL BASIC REQUIREMENTS

General basic requirements for the A.B. degree with a major in music (not the credential) are as follows:

1. Demonstration of proficiency in vocal or instrumental *performance* comparable to a level of difficulty of the Bach two-part inventions or the easier Haydn sonatas for the piano before admission to the major may be granted.
2. Upon entering the department, each student is required to take an entrance test in piano proficiency for classification, and to commence work on no less than four consecutively taken semesters of class or private piano study for credit. Exceptions to this must be approved by the Chairman of the Music Department.

3. Upon entering the department, each student is required to declare his major instrument, take a proficiency test thereon for classification, and to continue the development of his performance ability through class or individual study for credit after admission to the program, in accordance with department requirements.

4. Appearance as a soloist in at least one student recital during each semester in residence, after completion of two semesters of college work.

5. As laboratory experience, participation in at least one major performing group *each* semester (chorus, glee club, orchestra, or band) in which his major instrument or voice is regularly used. (Students planning to enter the teacher training program are referred to the performing group requirements for the special secondary credential in music listed in the section of the catalog under Professional Curricula in Teacher Education.)

SPECIFIC REQUIREMENTS FOR THE MUSIC MAJOR
(Not the teaching credential)

Music majors must complete the specific requirements listed below and in addition complete the requirements in one of the following fields of emphasis: (1) Performance, (2) Music History and Literature, (3) Creative Activity. Students desiring the special secondary credential in music should refer to this credential for specific requirements. Students are required to consult with the chairman of the Department of Music for selection of the field of emphasis.

Specific requirements for all majors (except for the special secondary credential): lower division: Music 9A-9B, 10A-10B-10C-10D (may be omitted in part or in full upon evidence of satisfactory piano technique); 52A-52B, 59A-59B; and six units of courses in performance groups selected from courses numbered 70 to 87. (Total: 28 lower division units.) Students electing performance as the field of emphasis must complete four additional lower division units from courses in their major instrument.

Upper division requirements: Music 107, 109A, 146A-146B-146C; four units selected from 102A-102B, 103A-103B; five units of courses in performance groups selected from courses numbered 170 to 187 (see performance group requirements); four units of the major instrument courses selected from 111, 112, 116, 117, 121, 122, 126, 127, 131, 132, or 150A-150B-150C-150D; and the additional upper division requirements in one of the following fields of emphasis: (Total: 25-27 units.)

Performance: Four units selected from Music 109B and 199. Students emphasizing performance must appear in a joint public recital during the junior year and must present an entire solo public recital during the senior year. The student must pass a preliminary audition of the compositions to be performed at the public recital before the music faculty during the semester preceding the recital appearance.

Music History and Literature: Six units selected from Music 109B and 199. During his senior year, the student emphasizing history and literature is required to organize, prepare program notes and present two recitals consisting of recorded or "live" performances each of which will deal with representative works of a certain period or composer or with certain periods, composers, works or styles to be compared; such students must pass a preliminary audition of the material to be presented before the music faculty at least one month in advance of each performance.

Creative Activity and Composition: Six units selected from Music 109B and 199. The student emphasizing creative activity and composition is required to present a concert of his compositions during the senior year and present the scores of works to be performed to the music faculty one month in advance of the performance.

Minor

A *minor in arts and sciences* is offered in *music*. General basic requirements for the minor are as follows: (1) Demonstration of vocal or instrumental performing ability before admission to the minor program may be granted; (2) as laboratory experience participation in one music performance group each semester for seven semesters. (In special cases this requirement may be waived by the Chairman of the Music Department.) Lower division: Music 9A, 10A-10B-10C-10D; six units selected from 9B, 52A-52B, and 59A; and four units of performance group courses selected from courses numbered 70 to 87. Upper division: Six units selected from Music 102A-102B and 103A-103B; and three units of music performance group courses selected from courses numbered 170 to 187.

THE SPECIAL SECONDARY CREDENTIAL IN MUSIC

A *teaching major in music* is offered for the special secondary credential and for the general secondary credential. For statement of requirements, refer to these credentials.

ELECTIVES IN MUSIC

The Music Department offers certain courses which fulfill the needs of students who do not have music as a major or minor subject but who are interested in music as an elective study area for the enrichment of their cultural background. Courses particularly suited for these needs are Aesthetics 2 and 102 and the music courses numbered 70 to 88 and from 170 to 188; such courses are designated as general education courses and may be taken as partial fulfillment of the literature, philosophy, and the arts requirement in general education.

Some students will be musically prepared to elect courses in music which may or may not be included in the general education group. Enrollment by qualified students who wish to elect these courses is encouraged.

Lower Division Courses

X. Music Fundamentals (3) I, II

Elementary sight singing and ear training, keyboard harmony, traditional study of intervals, triads, tonality, scales, basic rhythms, and elements of form. Not counted as a part of the music major or minor.

***7A. Musicianship—For General Elementary Teachers (3) I, II**

Elementary music theory and skills including notation, meter, rhythm, scales, intervals, triads, sight singing, ear training, dictation, elementary keyboard facility and other rudiments. State-adopted elementary music texts used. A general elementary credential requirement. Open only to candidates for the general elementary credential.

7B. Music Materials for the Elementary School (3) I, II

Study of all phases of elementary school music: singing, listening, reading, creative music, instruments, repertoire of songs and records, music projects. Required of all general elementary credential candidates. Prerequisite: Music 7A or consent of instructor.

9A. Elementary Harmony (3) I, II

Sight singing and ear training, keyboard harmony, traditional diatonic harmony, basic four-voice writing, analysis, the smaller homophonic forms. Prerequisites: Music X or competency in music fundamentals; adequate keyboard facility.

9B. Intermediate Harmony and Two-part Counterpoint (3) I, II

Continuation of Music 9A; harmonic alteration, further study of form, introducing variational treatment. Two-voice counterpoint based on baroque polyphony, simple chorale figuration, and the invention. Prerequisite: Music 9A.

***10A-10B. Piano—Elementary Class Instruction (1-1) I, II**

Basic keyboard experience through study of music reading, notation, scales, chords, and sight-reading covering a repertoire of beginning and intermediate songs and piano literature, with emphasis on keyboard harmony. Required for the kindergarten-primary credential and music majors and minors.

10C-10D. Piano—Elementary Class Instruction (1-1) I, II

Continuation of Music 10A-10B.

11ABCD. Piano—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission.

15A. Voice—Elementary Class Instruction (1) I, II

A class for beginners in the vocal field taking up the problems of breath control, tone placement, articulation and enunciation. Frequent classroom performance of simple songs.

15B. Class Voice—Continuation First Semester Voice (1) I, II

Study of more advanced songs with attention being given to interpretation, as well as continued work on tone, articulation and placement. Frequent performance before class required. Prerequisite: Music 15A or equivalent.

16ABCD. Voice—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission.

20AB. Strings—Elementary Class Instruction (1-1) I, II

Open to all students but primarily for those whose major instrument is not one of the stringed instruments and who are preparing for a teaching credential in music. Not open to students with credit for Music 120A-120B.

21ABCD. Strings—Intermediate Class Instruction (1-1-1-1) I, II

Material and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in violin, viola, cello, bass.

25A. Clarinet—Elementary Class Instruction (1) I, II

Open to all students but primarily for those whose major instrument is not one of the woodwind instruments and who are preparing for a teaching credential in music. Not open to students with credit for Music 125A.

25B. Oboe, Flute, and Bassoon—Elementary Class Instruction (1) I, II

Open to all students but primarily for those whose major instrument is not one of the woodwind instruments and who are preparing for a teaching credential in music. Not open to students with credit for Music 125B.

26ABCD. Woodwinds—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in flute, oboe, clarinet, and bassoon.

30AB. Brass—Elementary Class Instruction (1-1) I, II

Open to all students but primarily for those whose major instrument is not one of the brass instruments and who are preparing for a teaching credential in music. Not open to students with credit for Music 130A-130B.

31ABCD. Brass—Intermediate Class Intsruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in horn, trumpet, trombone, tuba, and baritone.

35. Percussion—Elementary Class Instruction (1) I, II

Open to all students but primarily for those who are preparing for a teaching credential in music. Not open to students with credit for Music 135.

50ABCD. Intermediate Individual Study (1-1-1-1) I, II

For the teaching credential performance requirement or for the requirements of the major emphasis curricula leading to the A.B. degree with a major in music. See explanation below for conditions under which credit may be given for music study under private instructors.

Piano
Organ
Voice
Flute
Oboe
Clarinet
Saxophone
Bassoon
French Horn
Trumpet
Trombone
Baritone Horn
Tuba
Percussion
Violin
Viola
Cello
Contrabass

52A-52B. History of Music (3-3) Year, I

Detailed study of chronological development of musical art and forms from the Middle Ages to the present. Analytical score study and assigned recordings. Familiarity with musicological resources through individual assignments. Prerequisite: Music X, or equivalent, and permission of instructor. (Formerly Music 101A-101B.)

53. Opera Technique (2) I, II

Training in the interpretation and characterization of light and grand opera. Specific work in coordination of operatic ensemble. Formerly Music 31.

59A. Advanced Harmony and Three-part Counterpoint (3) I, II

Higher harmonic alteration, analysis and writing of the intermediate forms based on classical and romantic idioms. Baroque polyphony in three-voice technique, elaborate chorale figuration, the suite, the fughetta. Prerequisite: Music 9B.

59B. Modern Harmonic Practice and Four-part Counterpoint (3) I, II

Modern idioms with compositional experience, with emphasis upon twentieth century styles. Continuation of baroque polyphony into four-voice technique; writing of canon and fugue. Prerequisite: Music 59A.

PERFORMANCE GROUP COURSES

The performance group courses are devoted to the study in detail and the public performance of a wide range of representative literature for each type of ensemble and to provide students with practical experience in rehearsal techniques.

***70A-70B. Chamber Music (1-1) I, II**

Sections for string, woodwind, brass, piano, and mixed ensemble groups. Permission of the instructor required.

70C-70D. Chamber Music (1-1) I, II

Continuation of Music 70A-70B.

72A. Beginning Instrumental Ensemble (½) I, II

Open to all instrumental students. Group performance of simple orchestral and band scores. Prerequisite: Music 20A, 25A, 30A, or equivalents, one or more.

72B. Intermediate Instrumental Ensemble (½) I, II

Group performance of orchestral and band scores of more advanced grade. Materials covered will prepare the student for minor parts in either the symphony orchestra or the symphony band. Prerequisites: Music 72A or equivalent.

***75ABCD. Symphony and Marching Band (2-2-2-2) I, II**

Permission of the instructor required.

***80ABCD. Symphony Orchestra (1-1-1-1) I, II**

Permission of the instructor required.

***85ABCD. Chorus (1-1-1-1) I, II**

Permission of the instructor required.

***86ABCD. Treble Clef (1-1-1-1) I, II**

Permission of the instructor required.

***87ABCD. Men's Glee Club (1-1-1-1) I, II**

Permission of the instructor required.

***88ABCD. Workshop Chorus (½-½-½-½) I, II**

Open to students who do not have music as a major or minor field and who are interested in singing standard choral works. No entrance examination required. Designed for nonmusic majors and minors.

Upper Division Courses

(For description of courses in the field of music appreciation, see Aesthetics.)

102A. Chamber Music Literature (2) I

Instrumental ensemble repertoire, including all ensemble combinations from sixteenth to twentieth centuries. Analysis by use of scores and recordings. Prerequisite: Music 52A-52B.

102B. Keyboard Literature (2) II

Piano, organ, and other clavier literature from the sixteenth to twentieth centuries. Recordings, scores, and guest performers. Prerequisite: Music 52A-52B.

103A. Symphonic Literature (2) I

A study of the symphony and symphonic poem; the evolution of their growth; an analysis with scores of the structure, harmonic content, and instrumentation of representative works of each period; an examination of their meaning and place in the history of music. Prerequisite: Music 52A-52B.

103B. Song Literature (2) II

Historical and musical development of the art song and of the folk song. Works of representative European and American composers in these media. Recordings and scores. Prerequisite: Music 52A-52B.

106A-106B. Sixteenth Century Counterpoint (2-2) I, II

Contrapuntal techniques of the sixteenth century, as expressed in the works of Palestrina, Lassus, and Ingegneri. Compositional exercise in setting parts of the Mass. Prerequisite: Music 59B.

107. Composition (3) I, II

Original writing in the larger homophonic and polyphonic forms, for various media. Opportunity for recital performance of original works. Prerequisite: Music 59B.

109A-109B. Instrumentation and Arranging (2-2) Year, I

Arranging of music for full orchestra. Selected works of students to be performed by standard orchestras. Prerequisites: Music 59B; 109A for 109B.

111ABCD. Piano—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studies in detail. Satisfactory audition before the instructor is required for admission.

112ABCD. Piano—Advanced Class Instruction (1-1-1-1) I, II

Materials and techniques of the advanced level are studied in detail. Satisfactory audition before the instructor is required for admission.

116ABCD. Voice—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of the intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission.

117ABCD. Voice—Advanced Voice Instruction (1-1-1-1) I, II

Materials and techniques of the advanced level are studied in detail. Satisfactory audition before the instructor is required for admission.

118-S. Workshop in Choral Art (6) Summer

An integrated course in choral and chamber music to be performed by workshop participants with the College Chorus and the San Diego Symphony Orchestra and in chamber music concerts. Development of analytical technique; study of vocal technique, of the larger forms, and of styles, including performing practices of the baroque and later periods. May be taken twice for credit. Prerequisite: Permission of instructors.

120A-120B. Strings—Elementary Class Instruction (1-1) I, II

Open to all students but primarily for those whose major instrument is not one of the stringed instruments and who are preparing for a teaching credential in music. Not open to students with credit for Music 20A-20B.

121ABCD. Strings—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in violin, viola, cello, and bass.

122ABCD. Strings—Advanced Class Instruction (1-1-1-1) I, II

Repertoire includes study of standard orchestral parts, solos, sonatas, suites and concerti. Satisfactory auditions before the instructor are required for admission. Sections are offered in violin, viola, cello, and bass.

123-S. Workshop in Instrumental Techniques and Chamber Music for String, Woodwind, and Brass Instruments (2) Summer

The analysis and interpretation of the literature for each instrument, with performance in various ensemble units; both group and individual instruction in class, under performing professional musicians. Prerequisite: Permission of instructors.

125A. Clarinet—Elementary Class Instruction (1) I, II

Open to all students but primarily for those whose major instrument is not one of the woodwind instruments and who are preparing for a teaching credential in music. Not open to students with credit for Music 25A.

125B. Oboe, Flute, and Bassoon—Elementary Class Instruction (1) I, II

Open to all students but primarily for those whose major instrument is not one of the woodwind instruments and who are preparing for a teaching credential in music. Not open to students with credit for Music 25B.

126ABCD. Woodwinds—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in flute, oboe, clarinet, and bassoon.

127ABCD. Woodwinds—Advanced Class Instruction (1-1-1-1) I, II

Repertoire includes study of standard orchestral parts, solos, sonatas, suites and concerti. Satisfactory auditions before the instructor are required for admission. Sections are offered in flute, oboe, clarinet, and bassoon.

130A-130B. Brass—Elementary Class Instruction (1-1) I, II

Open to all students but primarily for those whose major instrument is not one of the brass instruments and who are preparing for a teaching credential in music. Not open to students with credit for Music 30A-30B.

131ABCD. Brass—Intermediate Class Instruction (1-1-1-1) I, II

Materials and techniques of intermediate level are studied in detail. Satisfactory audition before the instructor is required for admission. Sections are offered in horn, trumpet, trombone, tuba, and baritone.

132ABCD. Brass—Advanced Class Instruction (1-1-1-1) I, II

Repertoire includes study of standard orchestral parts, solos, sonatas, suites and concerti. Satisfactory auditions before the instructor are required for admission. Sections are offered in horn, trumpet, trombone, tuba, and baritone.

135. Percussion—Elementary Class Instruction (1) I, II

Open to all students but primarily for those who are preparing for a teaching credential in music. Not open to students with credit for Music 35.

141. Methods in Teaching Piano (3) Summer

Teaching of beginning and intermediate piano. Survey of materials available for child and adult classes. Special consideration of the problems of the adult beginner. Supervised teaching of beginning students in individual lessons and class groups.

142. Survey of Harmony and Musical Form (2) (Irregular)

A review of diatonic and chromatic harmony, modulation and musical form. The material covered will serve as refresher study for the Colleague Examination under the California Plan of the Music Teachers Association of California. Not open to music majors or minors.

146A. Fundamentals of Conducting (1) I

Elements of baton technique and development of basic skills common to choral and instrumental conducting.

146B. Instrumental Conducting (1) II

Study of orchestra and band scores of graduated levels of advancement. The class will prepare and conduct instrumental works in public performances. Prerequisite: Music 146A.

146C. Choral Conducting (1) I

Representative literature and techniques for choral organizations will be studied and performed. Practical experience in typical conducting situations will be emphasized in various grade levels. Prerequisite: Music 146A.

150ABCD. Advanced Individual Study (1-1-1-1) I, II

For the teaching credential performance requirement or for the requirements of the major emphasis curricula leading to the A.B. degree with a major in music. See explanation below for conditions under which credit may be given for music study under private instructors.

Piano
Organ
Voice
Flute
Oboe
Clarinet
Saxophone
Bassoon
French horn
Trumpet
Trombone
Baritone horn
Tuba
Percussion
Violin
Viola
Cello
Contrabass

153. Opera Technique (2) I, II

Training in interpretation and characterization of light and grand opera. Specific work in coordination of opera ensemble.

166. Honors Course I, II (Credit to be arranged)

To be arranged after consultation with the chairman of the department. Refer to the Honors Program.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of department chairman.

PERFORMANCE GROUP COURSES

The performance group courses are devoted to the study in detail and the public performance of a wide range of representative literature for each type of ensemble and to provide students with practical experience in rehearsal techniques.

***170A-170B. Chamber Music (1-1) I, II**

Sections for string, woodwind, brass and piano ensemble groups. Permission of the instructor required.

170C-170D. Chamber Music (1-1) I, II

Continuation of Music 170A-170B.

172A. Beginning Instrumental Ensemble (½) I, II

Open to all instrumental students. Group performance of simple orchestral parts and band scores. Prerequisites: Music 20A, 25A, 30A, or equivalents, one or more.

172B. Intermediate Instrumental Ensemble (½) I, II

Group performance of orchestral and band scores of more advanced grade. Materials covered will prepare the student for minor parts in either the symphony orchestra or the symphony band. Prerequisites: Music 172A or equivalent.

***175ABCD. Symphony and Marching Band (2-2-2-2) I, II**

Permission of the instructor required.

***180ABCD. Symphony Orchestra (1-1-1-1) I, II**

Permission of the instructor required.

***185ABCD. Chorus (1-1-1-1) I, II**

Permission of the instructor required.

***186ABCD. Treble Clef (1-1-1-1) I, II**

Permission of the instructor required.

***187ABCD. Men's Glee Club (1-1-1-1)**

Permission of the instructor required.

***188ABCD. Workshop Chorus (½-½-½-½) I, II**

Open to students who do not have music as a major or minor field and who are interested in singing standard choral works. No entrance examination required. Closed to music majors and minors.

Graduate Courses

200A-200B. Special Problems in Music (2-2) Year, I, II

A graduate course in which students may carry out projects in various fields of music under the direction of faculty members who are specialists in the field chosen. Students registering for this course must apply for work within a certain field after conference with the music faculty.

203A-203B. Musicology (2-2) I, II

Problems and methods of research in aesthetics, acoustics, theory, composition, music history, and related fields. Source materials, bibliography. Comparative investigations of musical systems. Analytical and structural studies. Completion of written project. Prerequisites: graduate standing and permission of instructor.

206A-206B. Composition (2-2) I, II

Advanced composition for various media, development of original idiom, intensive study of modern music. Public performance of an extended original work as a final project. Prerequisites: graduate standing and permission of the instructor.

207ABC. Seminar in Choral Art (6-6-6) Summer

A study of choral and chamber music performed by seminar participants in the College Chorus, the San Diego Symphony Orchestra, and Chamber Music Concerts. Development of analytical technique; study of vocal techniques, of the larger forms, and of styles, including performing practices of the baroque and later periods. Prerequisites: graduate standing and permission of the instructor. Total credit for Music 118-S and Music 207ABC limited to 18 units.

290. Bibliography (1) I, II

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis or Project (3) I, II

Guidance in the preparation of a project or thesis for the master's degree.

Conditions Under Which Credit May Be Given for Music Study Under Private Instructors

Credit may be allowed for private instruction in music under the following conditions:

1. The applicant for such credit must be either a regularly enrolled student in the Music Department of the college (that is, a music major or minor), or he must have as a prerequisite or be taking concurrently with his private study, three units chosen from these specific courses: Music X, 7A, Aesthetics 2, or 102.
2. The instructor giving such private work must be approved by the Music Department. All private work and names of all such teachers must be registered in the office of the Music Department chairman at the beginning of the semester.
3. Under no circumstances may a student change teachers in the middle of a semester without first notifying the chairman of the Music Department and securing his permission for this change.
4. In case of first semester of private study in San Diego State College, the student is required to take a placement examination conducted by the Music Department faculty at the beginning of the semester, which will show the status of the student at the beginning of his work.
5. Students who have dropped out of school, or have stopped taking Applied Music for credit for one semester or more, upon the resumption of that instruction for credit are required to take the placement examination.
6. Evidence that the standards of the Music Department have been met will be shown by an examination conducted by the Music Department faculty at the end of the semester.
7. Ten clock hours of lessons and adequate preparation to pass the Applied Music examinations and the curriculum requirements of the department are required for one unit of credit.

NURSING

IN THE DIVISION OF LIFE SCIENCES

A *major in arts and sciences* is offered in *nursing* for the B.S. degree. Courses in the major are in addition to 45 units in general education. A minor is not required. This program is a four-year curriculum open to students who are admitted to the college in regular status and who are also admitted to the Department of Nursing. This program is not open to students who hold the R.N. license.

Specific requirements for the major: Lower division: Nursing 1, 20A-20B, 20C, 30A-30B, 31, 32; Bacteriology 1; Chemistry 2A-2B; Physics 6; Zoology 8A-8B; Home Economics 4A-4B; Sociology 50, 51. Upper division: Nursing 110, 112, 114, 116, 118, 120, 130, Advanced Nursing, Team Concepts, and Professional Relationships. In related fields: Sociology 103, 135, 185, 190; Health Education 190; Psychology 106, 131; History 172A-172B. This major is subject to revision.

General education requirements: Two units in physical education activities; pattern credit allowed for Health Education 21; Speech Arts 3; Psychology 1; English 1; English 2 or 3, and three additional units of general education electives in the area of Literature, Philosophy, and the Arts; 12 units of general education credit allowed in the social sciences; 12 units of general education credit allowed in the natural sciences; and general education credit in Family Life Education for Sociology 135. (Total 45 units.)

SUGGESTED OUTLINE OF COURSES

The following outline of courses, subject to individual adjustments to a small degree, is included as a guide to students in the nursing curriculum:

First Year

First Semester	*Units*	*Second Semester*	*Units*
English 1	3	English 2 or 3	3
Chemistry 2A	3	Chemistry 2B	3
Zoology 8A	3	Zoology 8B	3
Nursing 1	1	Home Economics 4A-4B	3
Psychology 1	3	Nursing 20A	1
Speech Arts 3	2	Gen. Educ. electives in Lit., Philos., Art	3
Physical Education	½	Physical Education	½
	15½		16½

Summer Session (college campus)

Phys. Educ. 40-S	1
Bacteriology 1	4
Sociology 50	3
Nursing 20B	1
	9

Second Year

First Semester	*Units*	*Second Semester*	*Units*
Physics 6	3	Nursing 30B	4
Nursing 30A	4	Nursing 32	2
Nursing 31	2	Sociology 51	3
Nursing 20C	4		
	13		9

Summer Session (at hospital)

Nursing 110	8

Third Year

First Semester	*Units*	*Second Semester*	*Units*
Sociology 103	3	Nursing 130	1
Sociology 135	3	Nursing 114	3
Psychology 106	3	Nursing 116	2
Nursing 112	3	Nursing 118	3
	—	Electives	1
	12		—
Summer Session (at hospital)			10
Nursing 120	8		

Fourth Year

First Semester	*Units*	*Second Semester*	*Units*
History 172A	3	History 172B	3
Psychology 131	3	Professional Relationships	1
Health Education 190	3	Sociology 185	3
Public Health Nursing Practice	0	Sociology 190	3
Electives	5	Advanced Nursing	2
		Team Concepts	1
	—		—
	14		13

Lower Division Courses

1. Introduction to Professional Relationships (1) I

An introduction and orientation to the profession of nursing. Considers ethical principles, the nurses' code, and the development of methods for solving personal, social, and professional problems which will face the student nurse.

20A. Nursing Arts (1) II

Individual hygiene and family health; orientation to the hospital as a community health agency and to the responsibilities of a nurse in providing good patient care. Prerequisites: Zoology 8A, Psychology 1, and Nursing 1.

20B. Nursing Arts (1) Summer

Introduction to the elements of observation and the records involved in patient care, and to the application of bacteriologic principles of asepsis and disinfection. Prerequisite: Nursing 20A.

20C. Nursing Arts (4) I

Fundamental principles, skills, and techniques of nursing. Practice in application of these skills and techniques in the clinical laboratory. Prerequisites: Nursing 20A and 20B.

30A-30B. Medical and Surgical Nursing (4-4) Year, I

Theory and practice of nursing care for the individual patient, and of medical and surgical therapy. Problems in total patient care. Prerequisite: Nursing 20C. Nursing 30A is a prerequisite for 30B.

31. Introduction to Pharmacology (2) I

Terminology, principles, of solving problems in the preparation of medications.

32. Pharmacology (2) II

Presentation of pharmacologic agents according to actions, uses, methods of preparation and administration. Vocabulary for reporting patient reactions to medication. Hazards of self-medication, legislation controlling use of drugs. Prerequisite: Nursing 31.

Upper Division Courses

Courses numbered under 150 not open to graduate nurses; courses numbered 150 and above open only to graduate nurses.

110. Medical and Surgical Specialties (8) Summer

Methods and principles of medical and surgical nursing care of pathological conditions of the sense organs, musculo-skeletal and genito-urinary systems. Lecture 2 units; clinical experience 6 units. Prerequisite: Nursing 30B.

112. Obstetrical Nursing (3) I

Study of care and treatment of the obstetric patient and newborn infant. Prerequisite: Nursing 110.

114. Pediatric Nursing (3) II

Nursing care of infants and children; prevention and control of disease; and instruction of parents. Prerequisite: Nursing 112.

116. Communicable Disease and Tuberculosis Nursing (2) II

History, occurrence, pathology, care and treatment of communicable diseases; emphasis on tuberculosis.

118. Psychiatric Nursing (3) II

Major concepts of psychiatric nursing and mental health that are involved in care of the mentally ill; therapies and rehabilitation measures.

120. Clinical Practice (8) Summer

Clinical practice in medical, surgical, pediatric, and obstetric nursing, using principles learned in previous courses. Prerequisites: Nursing 110, 112, 114.

130. History of Nursing (1) II

Nursing from earliest times; emphasis on the place of nursing in world history and the present social order.

150. Trends in Nursing (2) II

A survey of recent developments and current problems in nursing service and education. Prerequisite: R.N. certificate.

151. Ward Management (2) I

Problems of organization, personnel, and operation of a hospital unit, ward or clinic. Prerequisite: R.N. certificate.

152. Clinical Instruction (2) II

Application of the principles and methods of teaching in the various clinical services. Prerequisite: R.N. certificate.

OCEANOGRAPHY

IN THE DIVISION OF LIFE SCIENCES

Upper Division Courses

***100. The Oceans (2) I**

Physical and biological aspects of the oceans and their significance to man; problems of modern oceanography. One unit to apply as physical and one as biological science. Prerequisites: introductory courses in physical and life sciences.

PERSONNEL MANAGEMENT

A student desiring to prepare for personnel management may follow one of the three plans outlined below. Emphasis is placed on different areas, depending upon the vocational objective. A student preparing for graduate work in personnel management should consult with the adviser in his selected field in choice and arrangement of courses. These majors described below lead to the A.B. degree in arts and sciences. The major is in addition to 45 units in general education courses.

Major in Personnel Management

In the Division of Business

Personnel Management: This curriculum includes work in three fields: business, economics, and psychology. Lower division requirements: Business 14A and 20, Psychology 6, and Economics 1A-1B (15 units). Upper division requirements: Business 121, 153, 154, and 155 or 185; Economics 150, 151, 185; Psychology 104A, 105A, 121, 131, 152 (37 units). Three additional upper division units must be completed for graduation. It is recommended that these units and additional electives be chosen from the following: Business 157, 180, 186; Psychology 104B, 122; Sociology 110, 170, 185; Political Science 71A, 71B and 143.

Major in Public Personnel Management

In the Division of Social Sciences

Public Personnel Management: This curriculum includes work in three fields: political science, economics, psychology. Lower division requirements: Political Science 71A-71B, Economics 1A-1B, and Psychology 6 (15 units). Upper division requirements: Political Science 140A-140B or 147A-147B, 144, 145, 146, 181, 198; Economics 150, 151, 185; Psychology 104A, 105A, 121, 131, 152 (37 units). Another political science course may be substituted for Political Science 198 on the basis of individual counseling. Three additional upper division units must be completed for graduation. It is recommended that these units and additional electives be chosen from the following: Business 121; Economics 131; Political Science 142, 143.

Other Personnel Curricula

Pre-Industrial and Personnel Psychology: This curriculum is offered under the major in psychology. For details, refer to Psychology in this section of the catalog: Announcement of Courses.

A master's degree in Personnel Supervision and Training is offered. Refer to the section on Master of Arts Degree.

PHILOSOPHY

IN THE DIVISION OF SOCIAL SCIENCES

Major

A *major in arts and sciences* is offered in *philosophy* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: nine units in philosophy, including Philosophy 20. Upper division requirements: 24 upper division units in philosophy, or 18 units in philosophy and six units selected from related fields with the approval of the departmental adviser. A minor is not required.

Minor

A *minor in arts and sciences* is offered in philosophy. The minor consists of 15 to 22 units in philosophy, nine units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in philosophy.

Lower Division Courses

***1A. Introduction to Philosophy (3) I, II**

The place of philosophy in intelligent living. The methods, values, and areas of philosophical inquiry. Through discussion procedures, each student is encouraged to think independently on issues in ethics and religion.

***1B. Introduction to Philosophy (3) I, II**

The nature of philosophical inquiry as applied to problems of knowledge and reality. Through discussion procedures, the student has opportunity and is encouraged to formulate his own tentative conclusions.

***3A-3B. History of Philosophy (3-3) Year, I**

The development of the major concepts of philosophers in the western tradition. Relations of philosophy to science, art, religion, and social and political conditions. 3A covers the ancient and medieval period, 3B the modern. 3A is not prerequisite for 3B.

20. Logic (3) I

The use of logic in science and practical life. Analysis of fallacies. Logic and language. Formation and validation of hypotheses. Interpretations of probability. The logic of experimentation.

Upper Division Courses

***101. Contemporary Philosophy (3) II**

The major philosophical issues, movements, and figures in American and European philosophy of the twentieth century. Prerequisite: three units selected from Philosophy 1A, 1B, 3A, or 3B.

111A-111B. Theory of the State (3-3) Year, I
(Same course as Political Science 111A-111B)

The nature of the state, its organization and activities, and its relation to the individual and to other states. Special attention is given to recent developments in the field of political thought. Not open to students with credit for Political Science 111A-111B.

121. Deductive Logic (3) II (Offered in 1956-57 and alternate years)

Definition, classification, and division. The forms of reasoning. Analysis of propositions. Immediate inference. The syllogism. Dilemmas. Modern symbolic logic.

128. Theory of Ethics (3) I

A study of significant and typical value theories and systems and of the concrete problems such theories seek to explain. The emphasis will be placed on moral values. The student will be encouraged to examine critically his own system of values.

***129. Social Ethics (3) II**

Ethical issues of contemporary life. Individualism vs. collectivism; democracy vs. dictatorship; ethical problems arising in law, medicine, business, government, and interpersonal relationships.

***136. Philosophy of Art (3) II**

The nature of esthetic experience. The principal theories of art, both traditional and contemporary, are studied at length, both in relation to actual artistic production and to the role of art in society.

137. Philosophy of Science (3) I (Offered in 1956-57 and alternate years)

A critical examination of the basic concepts and methods underlying contemporary scientific thought. Contributions of the special sciences to a view of the universe as a whole. Prerequisite: three lower division units in philosophy.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

PHYSICAL EDUCATION

IN THE DIVISION OF HEALTH EDUCATION, PHYSICAL EDUCATION AND RECREATION

Major

A *major in arts and sciences* is offered in *physical education* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. A minor in a field other than physical education is required.

Major for Men: Lower division requirements: Two units of physical education activity courses (may be counted in general education); Physical Education 53, 63, 64, 72; Zoology 8A-8B. Upper division requirements: 26 units to include seven units from physical education courses numbered 141 to 148, inclusive; Physical Education 167, 168, 169, 170A or 170B; and eight units selected from courses in health, physical education, or recreation.

Major for Women: Lower division requirements: Four units of physical education activity courses to include Physical Education 1A, 2A-2B, 3A-3B, 5A-5B and 6 (two of these units may be counted as general education); Physical Education 53, 72, and Zoology 8A. Upper division requirements: 26 upper division units to include Physical Education 151, 156A-156B, 160, 167, 168, 170A or 170B; and nine units selected from courses in health, physical education, or recreation.

A *teaching major* is offered in *physical education* for the general secondary and special secondary school credentials. For statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *physical education.* The minor consists of 15 to 22 units in physical education, nine units of which must be in courses carrying upper division credit. The minor should be planned in consultation with the department chairman.

A *teaching minor* is offered in *physical education* for the general secondary, general elementary, and kindergarten primary credentials. For statement of requirements, refer to these credentials.

Required Activities

All lower division students must elect one or more activity courses each semester. Two units of activity credit must be offered for graduation, but no more than one activity course in any one semester may be counted toward this requirement. Students carrying fewer than 12 units during any semester may obtain permission from the Dean of Instruction to postpone taking physical education, but may not be exempted therefrom. No permanent excuses from required activity courses will be granted. The college physician, in conjunction with the chairman of the department, will consider stringent cases on an individual basis and make recommendations.

A medical examination is given each student when entering college and recommendation is made as to type of activity most beneficial. Individually adapted physical education classes to care for special needs are offered. The content of the required courses is planned to give each student an opportunity to participate in many activities of carry-over value, developmental nature, and recreational interest. An opportunity is afforded for students to participate in competitive sports and intramural programs.

MEN'S DEPARTMENT

Freshmen are required to choose from courses numbered 1-10. Sophomores and upper division students may choose from all courses offered. An activity course may be taken for credit once only.

Lower Division Courses

ACTIVITY COURSES

All activity courses are general education courses.

1A-1B-1C-1D. Individual Adaptation (½) I, II
2. Basketball (½) I, II
3. Boxing (½) I, II
4. Gymnastics (½) I, II
5. Soccer (½) I
6. Softball (½) II
7. Touch Football (½) I
8. Track and Field (½) I, II
9. Volleyball (½) I, II
10. Wrestling (½) I, II
13. Archery (½) I, II
14. Badminton (½) I, II
15. Fencing (½) I, II
16. Golf (½) I, II
17. Handball (½) I, II
18. Tennis (½) I, II
19. Bowling (½) I, II
20A-20B. Swimming (½) I, II
21. Life Saving (1) I, II
23. Sailing (½) I, II
24. Hiking (½) I, II
25. Baseball (½) II

INTERCOLLEGIATE SPORTS

30. Baseball (½) II
31. Basketball (½) I
32. Cross Country (½) I
33. Football (½) I
34. Golf (½) II
35. Gymnastics (½) II
36. Tennis (½) II
37. Track (½) II
38. Wrestling (½) II

WOMEN'S DEPARTMENT

Freshmen may choose from courses numbered 1-11 or 20A-B. Sophomores may choose from all courses offered. An activity course may be taken for credit once only.

The individual activities, tennis, golf, archery, badminton, swimming, and dancing are offered through the year. Candidates for the special secondary credential in physical education must select one as a major activity and two others as minors. Skills in the activities must be maintained as prerequisite to the senior course, Physical Education 155.

Lower Division

ACTIVITY COURSES

All activity courses are general education courses.

1A-1B. Fundamental Skills (½) I, II

Practice in efficient fundamental body movements.

2A-2B. Folk Dancing (Men and Women) (½) I, II

2A is a prerequisite for 2B.

3A. Modern Dance (Men and Women) (½) I, II

A beginning course in creative movement designed to develop control and intelligent use of the body as an instrument of expression.

3B. Modern Dance (Men and Women) (½) I, II

Skill techniques, qualities and style of movement, beginning compositional form. Prerequisite: 3A.

5A. Fieldball, Soccer, Speedball, Hockey (½) I, II

5B. Softball, Volleyball (½) I, II

6. Basketball (½) I, II

11A-11B. Ballroom Dancing (Men and Women) (½) I, II

11A is a prerequisite for 11B.

12A. Advanced Modern Dance (Men and Women) (1) I, II

Skill techniques, rhythmic form and analysis. Materials of design and group composition. Criticism of student sketches, studies and completed dances. Prerequisites: 3A, 3B, except for physical education majors who are not required to take 3B.

12B. Advanced Modern Dance (Men and Women) (1) I, II

Advanced skill techniques and group choreography. The use of percussion instruments and various forms of accompaniment. Discussion, lectures, practice. Prerequisites: 3A, 3B, 12A.

13A-13B. Archery (½) Year, I, II

14A-14B. Badminton (½) Year, I, II

16A-16B. Golf (½) I, II

18A-18B-18C. Tennis (Beginning, Intermediate, Advanced) (½-½-½) I, II

18A is a prerequisite for 18B; 18B is a prerequisite for 18C.

19A-19B. Bowling (½) I, II

20A. Swimming (For non-swimmers only) (½) I, II

20B. Swimming (Intermediate) (½) I, II

21. Life Saving (1) I, II

Standard American Red Cross course in life saving and water safety, designed to qualify superior swimmers for Senior Life Saving Certificate.

23. Sailing (½) I, II

24. Hiking (½) I, II

MEN AND WOMEN

PROFESSIONAL THEORY COURSES

Lower Division Courses

40-S. Recreational Activities (1) Summer

Skills, techniques, and rules of various sports with stress on furthering personal enjoyment and enlarging the recreational background of students. This course does not fulfill the requirements in physical education.

53. Physical Education in the Elementary School (2½) I, II

The state program in physical education for the elementary school forms the basis of the course. Candidates for the elementary credential are required to take the course section which includes two lectures and two laboratory periods per week. Candidates for the special secondary credential in physical education may take the course section which includes two lectures without laboratory periods.

63. Professional Activities (men) (2) II

Practice in the skills and techniques of the dance, and experience in the organization and presentation of dance materials.

64. Professional Activities (men) (2) I

The acquisition of skills and teaching techniques, and the development of knowledge and interest in the combative activities, primarily wrestling and boxing.

72. Introduction to Physical Education (2) I, II

History and principles of physical education and sports. Study of the objectives of modern physical education with a view toward the development of a basic philosophy and background for professional education.

Upper Division Courses

***122. Water Safety Instruction (1) II**

Methods and materials for teaching swimming. Course designed to qualify expert swimmers for American Red Cross Swimming Instructors Certificate. Prerequisite: P.E. 20B or equivalent, and American Red Cross Senior Life Saving Certificate.

141. Professional Activities: Gymnastics (men) (2) I

The skills and teaching techniques in gymnastics. The place of tumbling, apparatus, self-testing and calisthenics in the school program. Knowledge of the rules for competition in gymnastics.

142. Professional Activities: Swimming (men and women) (1) II

The development of skills in swimming with emphasis on the teaching techniques. Scope of course is from beginning swimming to life saving techniques.

143. Professional Activities: Coaching Track (men) (1) I

Organization of practice sessions and drills for developing fundamental skills and special abilities; study of rules and officiating techniques; consideration of scheduling problems, coaching techniques and meet strategy and organization. (Formerly P.E. 147A.)

144. Professional Activities: Coaching Baseball (men) (1) II

Organization of practice sessions and drills for developing fundamental skills and special abilities; study of rules and officiating techniques; consideration of scheduling problems, coaching techniques and meet strategy and organization. (Formerly P.E. 147B.)

145. Professional Activities: Team Sports (men) (2) I

The skills, rules, teaching techniques, officiating, and organization of materials in such sports as soccer, touch football, softball, hockey, basketball, and other sports.

146. Professional Activities: Individual Sports (men) (2) II

The skills, rules, teaching techniques, officiating, and organization of materials in such sports as handball, tennis, badminton, archery, golf, and other sports.

147. Professional Activities: Coaching Football (men) (1) I

Organization of practice sessions and drills for developing fundamental skills and special abilities; study of rules and officiating techniques; consideration of scheduling problems, coaching techniques and game strategy. (Formerly P.E. 148A.)

148. Professional Activities: Coaching Basketball (men) (1) I

Organization of practice sessions and drills for developing fundamental skills and special abilities; study of rules and officiating techniques; consideration of scheduling problems, coaching techniques and game strategy.

151. Folk Dancing Materials and Advanced Techniques (women) (2) I

Folk customs, festivals, and costumes. Selection of dance materials for various age groups. Practice in advanced techniques. Prerequisites: Physical Education 2A-2B. (P.E. 151 formerly P.E. 161.)

153A-153B. Problems in Modern Dance (men and women) (2-2) I, II

The construction and critical evaluation of the more complex forms of choreography. Prerequisites: Physical Education 12A-12B, or permission of instructor. (P.E. 153A-153B formerly P.E. 163A-163B.)

154A-154B. Methods of Teaching Modern Dance (2-2) I, II

Advanced skill techniques with emphasis upon individual choreography. Selection of materials and course planning for the secondary school. Class teaching experience. Brief survey of basic literature and current readings in the field. Prerequisites: Physical Education 3A and 12A. (P.E. 154A-154B formerly P.E. 164A-164B.)

155. Techniques of Individual Sports (women) (1) I

Review of individual playing techniques, knowledge, rules, and teaching methods in tennis, archery, badminton, and swimming. Designed for senior majors in physical education, who are expected to demonstrate a high degree of competency in the sports indicated. (Formerly P.E. 185.)

156A-156B. Sports Methods (women) (2-2) I, II

Analysis of skills, teaching techniques, officiating, and the organization of materials in team sports for women. Prerequisites: Physical Education 5A, 5B, 6.

157A-157B. Choreography in Contemporary Dance (men and women) (3-3) I, II

Experimentation in the dance, relating contemporary theories to other art forms. The study of force and time-space relationships as factors in choreography. Production problems. Two lectures and three hours of laboratory work per week. Prerequisite: permission of instructor. (P.E. 157A-157B was formerly P.E. 167A-167B.)

160. Teaching of Body Mechanics (women) (3) II

Efficient use of the body in daily living; evaluation and classification of exercises, study of methods, and practice in planning and presenting material. Prerequisite: P.E. 167.

161. Instructor's Course in First Aid (2) I, II

Instructor's course in first aid, as outlined by the American Red Cross. Standard first aid techniques, care of injured, certification and record keeping, and practical work in first aid. (Formerly Physical Education 151.)

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

167. Applied Anatomy and Kinesiology (3) I

Anatomical and kinesiological analysis of human structure and movement. Application of analysis relative to mechanical principles as influenced by efficiency vactors of body functions. Prerequisites: Zoology 8A-8B. (P.E. 167 was formerly Physical Education 155.)

168. Physiology of Exercise (3) II

A nonlaboratory course emphasizing the relation of physiology to muscular exercise in physical activities. Prerequisites: Zoology 8A-8B.

169. Adapted Activities (3) II

The adaptation of programs for the atypical individual, including physical examinations, training and prescribed exercises, follow-up, instructional problems, and evaluation. Three lectures and two laboratory periods per week. Prerequisite: Zoology 8A-8B and Physical Education 167. (P.E. 169 was formerly Physical Education 177.)

170A-170B. Recreational Leadership (2-2) Year, I
(Same course as Recreation 170A-170B)

Principles and practices in recreational leadership. Methods of instruction and special techniques in the activities of the recreation program. Attention to crafts, music, social programs, drama, special projects, dance, sports, campcraft, and outdoor education. Not open to students with credit for Recreation 170A-170B.

190. Administration of Physical Education in the Secondary School (3) I, II

Problems and practices in the organization and administration of the secondary school activity program. Study, selection and adaptation of activities, examination, and grouping of pupils, use and evaluation of tests. Selection and maintenance of equipment and facilities.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of department chairman.

Graduate Courses

200. Evaluation Procedures in Health, Physical Education and Recreation (2) I
(Same course as Health Education 200)

A study of tests and measurements in the profession, with practice in their construction and use, and interpretation of results. Not open to students with credit for Health Education 200.

201. Developmental Physical Education (2) (Alternate years)

Intensive study of postural divergencies, lack of physical development, and methods of correcting such conditions through exercise. Practice in making physical examinations, constructing individual exercise programs, and teaching remedial exercises. Consideration of ethical procedures and limitations. Prerequisite: Physical Education 167.

203. Problems in Physical Education (2) (Alternate years)

A survey of current problems facing the physical education profession, through a review of literature, discussion of trends, and observation of school situations. Analysis and evaluation of actual problems. Written reports required.

204. Problems in Recreation (2) (Alternate years)
(Same course as Recreation 204)

A survey of current problems facing the recreation profession, through a review of literature, discussion of trends, and observation of school situations. Analysis and evaluation of actual problems. Written reports required. Not open to students with credit for Recreation 204.

205. Curriculum in Physical Education and Health Education (2)
(Alternate years)

Analysis of current curricula in physical education and health education, with special emphasis upon curriculum construction and evaluation.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

Guidance in the preparation of a project or thesis for the master's degree.

PHYSICAL SCIENCE

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *physical science major in arts and sciences* is offered for the A.B. degree to students who have been admitted to the teacher education program if eight units in professional education courses are completed by the date of degree candidacy. The major is in addition to 45 units in general education, except that nine units of chemistry, physics, and mathematics may be applied toward general education requirements. Lower division requirements: Chemistry 1A-1B, Physics 4A-4B-4C (or 2A-2B-3A-3B), Mathematics 3A-3B, 4A (recommended 4B). Upper division requirements: 24 units to include a minimum of seven units in each of chemistry and physics. Chemistry must include Chemistry 101A. Physics must include Physics 107 and 158 (or 148 if physics preparation is 2A-2B). Recommended: Physical Science 150 and Industrial Arts 185. Other courses to be selected with approval of the departmental adviser. Physical Science majors are not required to complete a minor;

however, candidates for the general secondary credential may wish to complete a teaching minor for the general secondary credential during the undergraduate program.

A *teaching major in physical science and general science* is offered for the general secondary and junior high school credentials. For a statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *physical science* for the A.B. degree to students who have been admitted to the teacher education program if eight units in professional education courses have been completed by the date of degree candidacy. The minor consists of a minimum of 20 units to include three or more units in at least three of the following areas: Astronomy 1; Biology 3, 4; Chemistry 2A-2B or 1A-1B; Geology 2 or 1A; Physics 2A-2B and 3A-3B or 4A-4B-4C.

A *teaching minor in physical science and general science* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Lower Division Courses

***1. Introduction to Physical Science (3) I, II**

The nature of the physical universe, through concepts of the whole field of physical science, rather than emphasis on its separate divisions. Materials chosen primarily from astronomy and physics. No prerequisites. Not open to students with credit for a college course in physics or astronomy, or Physical Science 5. This course may be followed by Astronomy 9 for laboratory credit.

***2. Introduction to Physical Science (3) I, II**

Continuation of Physical Science 1, with emphasis on materials chosen primarily from chemistry and geology. It is recommended but not required that Physical Science 1 be taken first. Not open to students with credit for a college course in chemistry or geology. May be followed by Geology 3 for laboratory credit.

***5. Man and His Physical World (3) I, II**

Selected topics in physical science. The relations of physical science to modern life through emphasis on the scientific method. Designed for those intending to take only one semester of physical science. May be followed by Astronomy 9 or Geology 3 for laboratory credit. Not open to students with credit for Physical Science 1 or 2, or a college course in astronomy, chemistry, geology, or physics. (Physical Science 5 formerly offered as Physical Science 41.)

Upper Division Courses

140S. Contemporary Problems in Physical Science (1) Summer

A series of six weekly lectures on varied aspects of physical science by scientists engaged in research. Reading and reports required of students enrolled for credit. These lectures are open to the public.

***150. Readings in the Physical Sciences (2)**

Reading from selected materials with informal class discussion of topics.

PHYSICS

IN THE DIVISION OF PHYSICAL SCIENCES

Major

A *major in arts and sciences* is offered in *physics* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Physics 4A-4B-4C, Chemisery 1A-1B, or their equivalents. Recommended: a reading knowledge of French or German. Upper division requirements: 24 upper division units in physics to include Physics 105A-105B, 107, 110, 158; three units chosen from Physics 103, 160, or 170; two units chosen from Physics 120, 123, or 124; and two units of Physics 198. A minor in mathematics is required, consisting of Mathematics 3A-3B, 4A-4B, or their equivalents, and Mathematics 118A-118B. Recommended: three units chosen from Mathematics 104, 111, 119, 121, or 124. Nine units of chemistry, physics, and mathematics may be applied toward general education requirements.

A *major in arts and sciences* is offered in *physics* for the B.S. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Physics 4A-4B-4C, Chemistry 1A-1B, Mathematics 3A-3B, and 4A-4B, or their equivalents. Upper division requirements: a minimum of 36 upper division units including Physics 103, 105A-105B, 107, 110, 158; two units of upper division laboratory; two units of Physics 198; and Mathematics 118A-118B. The program, planned in consultation with the departmental adviser for this degree, must be designed to provide a four-year terminal program for the student. A minor is not required. Nine units of chemistry, physics, and mathematics may be applied toward general education requirements.

The following additional courses are required as a part of two options approved under this degree: *applied physics:* Physics 106, 112 and four units of Physics 120. Recommended: Physics 114, 160, 170 and Astronomy 107. *Electronics:* Physics 104A-104B, 123, 124, 160 and either Physics 152 or Engineering 150. Recommended: Physics 114, 170 and Astronomy 107.

A *teaching major in physical science and general science* is offered for the general secondary school credential and a *teaching major in general science* is offered for the junior high school credential. For statement of requirements, refer to these credentials.

Minor

A *minor in physics* is offered in arts and sciences. The minor consists of 15 to 22 units in physics, six units of which must be in courses carrying upper division credit.

A *teaching minor in physical science and general science* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Lower Division Courses

NOTE: A maximum of 12 units of lower division physics credit may be applied toward the A.B. or B.S. degrees.

***2A-2B. General Physics (3-3) Year, I, II**

This course is for liberal arts and certain preprofessional students who do not desire intensive physics preparation. Lectures, demonstrations and discussions. 2A, properties of matter, mechanics and heat. 2B, electricity, magnetism, sound and light. Prerequisite: two years of high school mathematics. Physics 2A is a prerequisite for 2B. Recommended concurrent registration in Physics 2A and 3A, and in Physics 2B and 3B.

***3A-3B. Physical Measurements (1-1) Year, I, II**

A laboratory course to accompany Physics 2A-2B. 3A: properties of matter, mechanics and heat. 3B: electricity, magnetism, sound and light. One three-hour laboratory per week. Prerequisite for 3A: concurrent or previous registration in Physics 2A. Prerequisite for 3B: concurrent or previous registration in Physics 2B.

4A-4B-4C. Principles of Physics

The following sequence of three courses is designed to give a thorough background in the fundamental principles of physics, with applications to practical problems. Each course three lectures and one three-hour laboratory per week.

4A. Mechanics (4) I, II

The mechanics of solids and fluids. Prerequisites: credit for Mathematics 3A and concurrent registration in Mathematics 3B. Not open to first semester freshmen.

4B. Electricity (4) I, II

Magnetism, electricity and elementary electronics. Prerequisite Physics 4A.

4C. Heat, Sound and Light (4) I, II

Heat and elementary thermodynamis, sound and light. Prerequisite: Physics 4B.

***5. Physics of the Home (4) I**

Everyday applications of physics in heating, lighting, insulating, cooking, refrigeration, air-conditioning, sound, music, mechanical and electrical appliances. Not open to students with credit for Physics 2A, 2B, 4A, 4B, or 4C. Three lectures and three hours of laboratory per week.

6. Physics for Nurses (3) I

Selected topics in mechanics, heat, light, electricity, and atomic physics applicable to nursing. Discussions, demonstrations, and laboratory practice. Meets two three-hour periods per week.

14. Acoustics of Music (3) II

Fundamentals of acoustics and audition underlying musical phenomena presented in descriptive and nonmathematical terms. Prerequisite: a technical understanding of music.

Upper Division Courses

103. Basic Electronics (3) I (Same course as Engineering 103)

A qualitative survey of electron tubes, amplifiers, and electronic systems. Prerequisites: Physics 4B or 2B and 3B. (Formerly Physics 102.) Not open to students with credit for Engineering 103.

104A-104B. Vacuum Tube Circuit Design (3-3) I, II
(Same course as Engineering 104A-104B)

The design of resistance loaded amplifiers including negative feedback and its application to regulated power supplies, cathode followers, and DC amplifiers. Power amplifiers, oscillators, modulators and detectors. Prerequisites: Physics or Engineering 103 and 110, or permission of the instructor. Not open to students with credit for Engineering 104A-104B. Students with credit for Physics or Engineering 104 may enroll in Physics or Engineering 104B.

105A-105B. Analytical Mechanics (3-3) I, II

Fundamental principles of Newtonian mechanics by use of vector methods. Kinematics and dynamics of particles and rigid bodies. Statics of rigid bodies. Vibration and impact. Prerequisites: Physics 4A or 2A-2B, and a working knowledge of calculus.

106. Optics (3) II

A study of reflection, refraction, dispersion, interference, diffraction, double refraction and polarization, with applications to optical instruments. Also wave propagation, radiation, spectra and the nature of light. Prerequisite: Physics 2B-3B or 4C.

107. Electrical Measurement (2) I (Same course as Engineering 107)

The theory and application of electrical measurements, including the measurements of current, voltage, power, resistance, capacitance and inductance. Stress on determination of probable errors of measurements. An hour lecture and a three-hour laboratory per week. Prerequisites: Physics 2B-3B or 4B, and a working knowledge of calculus. Not open to students with credit for Engineering 107.

110. Alternating Current Circuits (3) I (Same course as Engineering 110)

The operator "j" applied to circuits containing resistance, capacitance and inductance; series and parallel resonance; coupled circuits; transients; practical circuit elements, networks. Prerequisite: Physics 4B and Mathematics 4A. Not open to students with credit for Engineering 110.

112. Heat and Thermodynamics (3) II

A study of the thermal properties of matter with an introduction into the kinetic theory of gases and the laws of thermodynamics. Prerequisites: eight units in physics and a working knowledge of calculus.

114. Acoustics (3) II

A study of wave motion and its application to the production, transmission and reception of sound. Material in architectural acoustics, speech and hearing, and acoustical instruments is presented. Prerequisites: Physics 2B-3B or 4C.

120. Advanced Laboratory (2) I, II

Advanced experimental measurements in a branch of physics listed below. The course may be repeated for each subject. With the consent of the instructor and adviser, the course may be repeated in the same subject but with new material. Prerequisite: consent of the instructor.

A. Acoustics
B. Atomic Physics
C. Electricity
D. Heat and Pyrometry
E. Mechanics
F. Optics

123. Electronics Laboratory (2) I, II (Same course as Engineering 123)

An experimental study of electron tubes and their associated circuits. Study of cathode ray oscilloscope, vacuum tube voltmeter, characteristics of power supplies, amplifiers and filter systems. An hour lecture and a three-hour laboratory per week. Prerequisites: Physics 107 or Engineering 107; previous or concurrent registration in Physics 104A or Engineering 104A; or permission of the instructor. Not open to students with credit for Engineering 123. (Physics 123 was formerly offered under the course number, Physics 122).

124. Radio Measurements (2) II (Same course as Engineering 124)

Laboratory measurements of the parameters of resonant circuits at radio frequencies. Study of the properties of oscillators, modulators, detectors and wave guides. An hour lecture and a three-hour laboratory per week. Not open to students with credit for Engineering 124. Prerequisites: Physics 123 and previous or concurrent registration in Physics 104B or Engineering 104B.

***148. Introduction to Modern Physics (3) II**

A nonmathematical course covering recent developments in the field of physics, including X-rays, radio-activity, cosmic rays, atomic and nuclear energy. Prerequisite: upper division standing. Not open to students who have credit for Physics 4A-4B-4C, or equivalent.

152. Advanced Electronics (3) II

A study of selected topics from contemporary electronics. Prerequisite: Physics or Engineering 104B.

153. Servo-System Design (3) II

Regulatory systems, including servomechanism by the Laplace Transform. System performance and stability. Practical components and examples of typical designs. Prerequisites: Differential equations and Physics or Engineering 103, or permission of the instructor.

154. Television Circuits (3) II

The principles, analysis and design of television transmitting and receiving systems. Special operational mathematics techniques will be included. Prerequisite: Physics or Engineering 104B.

155. Analogue Computers (3) II

Electronic integration and differentiation; solution of differential equations; multiplication, division and function generation; simulation of mechanical systems varying with time, solution of typical problems; auxiliary equipment, layout of large installations. Prerequisites: differential equations, and Physics or Engineering 103.

156. Digital Computers (3) II

The binary number system; electronic and magnetic flip-flop circuits; memory devices; programming; complete computer systems. Auxiliary equipment for inserting information and reading out results rapidly. Typical applications and limitations. Prerequisites: differential equations, and Physics or Engineering 103.

158. Atomic Particles (3) I

A study of experimental evidence for the existence and properties of the elemental atomic and nuclear particles. Introduction to the fields of atomic and nuclear physics. Prerequisite: Physics 4A-4B-4C, or equivalent.

160. Circuit Analysis (3) II

A study of filter design, transmission lines, and network analysis. Prerequisite: Physics 110 or Engineering 110.

166. Honors Course (Credit to be arranged) I, II

An individual study arrangement for students admitted to the Honors Program. Enrollment through the department chairman, subject to the approval by the Committee on Honors. Refer to the Honors Program.

167. Transistor Circuits (3) II

Properties of transistors and their application to amplifiers, oscillators and trigger circuits. Prerequisite: Physics or Engineering 104B or permission of the instructor.

170. Electromagnetic Theory (3) II

Electrostatics and magnetostatics treated by vector methods; chemical and thermal effects; motion of ions in electric and magnetic fields; magnetic field of a current; electromagnetic induction and radiation. Prerequisites: Physics 110 or Engineering 110, and a working knowledge of vector analysis and differential equations.

171. Introduction to Microwaves (3) I

A study of the generation and amplification of microwaves. Prerequisites: Physics or Engineering 104B and Physics 160.

198. Senior Report (2) I, II

Each student will work on a project in physics and make oral reports to the class. A complete written report is required on each project. One discussion period and one three-hour laboratory per week. Prerequisite: permission of instructor. May be repeated to a total of four units of credit.

199. Special Study (1-2) I, II

Individual study or laboratory work on a special problem in physics selected by the student. Each student will be assigned a member of the staff who will supervise his work. Credit, hours and topics to be arranged in each case. Six units maximum credit.

Graduate Courses

200. Seminar (2 or 3) I, II

An intensive study of one phase of physics, such as: mechanics, heat and thermodynamics; acoustics, electromagnetic radiation electronics, atomic physics. May be repeated with new subject matter for additional credit.

290. Bibliography (1)

Exercise in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

Guidance in the preparation of a project or thesis in physics for the master's degree.

POLITICAL SCIENCE

IN THE DIVISION OF SOCIAL SCIENCES

Major

A *major in arts and sciences* is offered in *political science* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Political Science 1A-1B or 71A-71B. Upper division requirements: 24 units to include (a) three units in Political Science 197 or 199 and (b) 21 upper division units in political science distributed among two of the following groups: *Group I: Theory and government; Group II: Administration; Group III: International affairs.* A minor is required and is to be chosen with approval of the chairman of the department.

Students majoring in political science are advised to become as familiar as possible with related social science fields. It is recommended that majors have a reading knowledge of at least one foreign language.

A *teaching major* is not offered in political science; however, courses in political science may be used as part of the *teaching major in social science* for the general secondary and junior high school credentials. For statement of requirements, refer to these credentials.

Curricula for Government Service

For students who expect to enter government service, the following programs of study are offered: the public administration curriculum, the public personnel management curriculum, and the inter-American relations curriculum. These programs are described elsewhere in this section of the catalog. (Refer to the Index.)

Minor

A *minor in arts and sciences in political science* is offered. The minor consists of 15 to 22 units in political science, nine units of which must be in courses carrying upper division credit.

A *minor in arts and sciences in public administration* is also offered. The minor consists of Political Science 71A-71B in the lower division; Political Science 140A-140B and three units from 198 or other political science course in the upper division.

A *teaching minor in social science* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Lower Division Courses

***1A. Introduction to Government (3) I, II**

Theories and principles of government, with special attention to the problems created by modern industrialism and population pressures.

***1B. Introduction to Government (3) I, II**

A comparative survey of selected foreign governments: their constitutional principles, political institutions, and governmental problems.

***71A-71B. Introduction to American Government and Politics (3-3) Year, I, II**

Semester I: Governmental organization in the United States; the federal system; the organization, powers and functions of the legislative, executive and judicial branches of the government; the relations between federal, state and local units of government.

Semester II: Expansion of governmental functions and the development of means of democratic control; an examination of the increased use of government as an instrument of social control; the history, motivation, methods and control of political parties; nominations, elections and minority groups; pressure politics.

This year course meets the graduation requirement in American history, institutions and ideals, and the United States Constitution. The second semester course, 71B, also covers the required materials in California state and local government.

Upper Division Courses

***101. American Institutions (3) I**

The principles of the Constitution of the United States of America, and a survey of the political and social institutions which have developed under the Constitution.

This course meets the graduation requirement of the United States Constitution and California state and local government.

***105. American Political Thought (3) II**

A survey of the development of American ideas concerning political authority from the period of colonial foundation to the present time.

***111A-111B. Theory of the State (3-3) Year, I**
(Same course as Philosophy 111A-111B)

The nature of the State, its organization and activities, and its relation to the individual and other states. Special attention is given to recent developments in the field of political thought. Not open to students with credit in Philosophy 111A-111B.

120. Political Parties (3) I

A critical analysis of the political party as a part of the process of government; party organization and activities; nominating and campaign methods; theories and functions of the party system; party responsibility. Special emphasis will be placed upon the function of the two-party system in American government.

121. Basic Factors in American Politics (3) I

An analysis of American political, legal, economic, and social factors in their relation to our political system and the public interest.

122. Propaganda and Public Opinion (3) II (Same course as Journalism 132)

A study of the forces which mold the American public mind, the practice of propaganda, a description and analysis of public relations, pressure groups and their effect in American public life. Not open to students with credit for Journalism 132.

123-S. Contemporary American Politics (3) Summer

A consideration of a selected group of current major political problems in terms of their possible future implications and of their relationship to established American democratic principles and ideals.

E-127. Public Relations of Public Agencies (2 or 3) II (Extension)

The place and function of public relations in government. Historical development of public opinion relating to governmental agencies and employees. Current public relations practices in governmental agencies.

128. Government Report Writing (2) I

Actual writing problems in government, including surveys, recommendations, studies, analyses, progress reports, annual reports, etc., are discussed and their solutions analyzed. Attention to methods of collecting and organizing data, and practice in effective presentation of facts and ideas. Special consideration is given to problems of class members.

135. California Law of Municipal Corporations (2) II

California law governing the nature, regulation and control of the counties, charter cities, sixth class cities, school districts and special districts. The creation, alteration, dissolution, legal actions by and against, powers and duties; rights and liabilities of local governments.

136. Administrative Law (2) I

The law of public office and public officers, powers of administrative authorities, scope and limits of administrative powers, remedies against administrative action.

***137A-137B. Constitutional Government (2-2) Year, I**

Modern government and politics; its theoretical foundations, institutions and problems. Emphasis will be on American experience with useful comparisons with other countries. Either semester may be taken first. This year course meets the graduation requirement in the United States Constitution and California state and local government.

***139A-139B. American Constitutional Development (3-3) Year, I**

A study of the work of the Convention of 1787 and of significant phases of American constitutional law. This year course meets the graduation requirement in American history, institutions and ideals, and United States Constitution. The second semester course, 139B, also covers the required materials in California state and local government.

140A-140B. Principles of Public Administration (3-3) Year, I

Semester I: The administration of public services, staff and line functions, theories of organization and practices, and procedures of different types of governmental agencies.

Semester II: Principles and problems in governmental budgeting, performance and capital outlay, budget procedures, organization and administration of personnel programs, controls over administrative behavior, responsible bureaucracy and professionalism in the public services. Not open to students with credit in Political Science 147A-147B.

142. State Government (3) II (Same course as Journalism 142)

A study of the political structure and its operation used in the carrying on of the functions exercised by the states; state-federal relations; state-local government relations; particular emphasis on California government. This course meets the graduation requirement in California State and local government. Not open to students with credit for Journalism 142.

143. Municipal and County Government (3) I (Same course as Journalism 143)

A study of the organization and its operation used to carry into effect the functions assigned to local governmental units; particular emphasis upon local government in California. This course meets the graduation requirement in California state and local government. Not open to students with credit for Journalism 143.

144. Introduction to Public Personnel Administration (2) I

An introduction to the field, giving general coverage of the problems involved in recruitment, placement, supervision, etc., of public employees. Prerequisite: permission of instructor.

145. Human Relations in Management (2) II (Same course as Business 157)

Human factors in supervision and management. Problems of incentives, attitudes, communication, and other personal relations between employee and employer. Bases of effectiveness of various types of leadership. Discipline and grievances. Prerequisite: permission of instructor. Not open to students with credit for Business 157.

146. Wage and Salary Administration (3) I (Same course as Business 154)

Problems of job analysis; major techniques of job evaluation, including ranking, classification, point system, factor comparison; problems of wage and salary administration, incentive pay methods; merit rating plans. Not open to students with credit for Business 154.

147A-147B. Public Administration (2-2) Year, I

Administrative organization. Relationship between federal, state, and local governments. Budget, personnel, management, and control. Not open to students with credit for Political Science 140A-140B.

148. The Government of Metropolitan Areas (2) I

A study of the governmental problems of metropolitanism; overlapping of governments, services, planning and financing. The use of intergovernmental contracts for public service, proper public service areas, and special authorities.

***150A-150B. International Relations (3-3) Year, I**

A historical and analytical consideration of the basic factors—historic, geographic, economic, ideologic, and strategic—which underly and condition the modern conflict between the "sovereign state" and the "community of nations." Fall semester: Origins and development through the nineteenth century. Spring semester: Twentieth century experimentation and conflict.

152. International Organization (3) I

A critical analysis of the organization by which the international community seeks to provide for the exercise of legislative, administrative and judicial functions on the international level: diplomatic and counsular corps; conferences; administration through commissions and unions; amicable procedures for settlement of disputes; the League of Nations-United Nations experiment.

153. Principles of International Law (3) I

The function of law in the international community. The historical development of the ideas and rules of international law and their place in the modern diplomatic and legal structure.

154. International Law and the Courts (3) II

A case study of the application of the rules of international law in national and international courts.

155. Dynamics of Modern International Crises (3) I

The determination and analysis of facts surrounding international crises since World War II; the evaluation of these crises and their effects upon external policies of the United States and the operations of the United Nations. Prerequisite: consent of the instructor.

158A-158B. American Foreign Policy (3-3) Year, I
(Same course as History 176A-176B)

Lectures and reading in the field of American foreign relations since 1776, with special emphasis, in the second semester, upon affairs since 1900. A general survey course. Not open to students with credit for History 176A-176B.

160. Government of the British Dominions (3) II

Development of the new British Empire and imperial relations of the self-governing dominions; government of Canada, Australia, New Zealand, and South Africa; conditioning historical, economic and racial factors. Not open to students with credit for History 156B.

162. Government of England (3) I

The structure and functioning of English parliamentary system with emphasis upon present day political principles and parties.

165. Governments of Latin America (3) II

The governments of leading and representative Latin American states. Emphasis on the background and evolution of current political institutions and philosophies.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

167. Government of the Soviet Union (3) I

Theory and practice of government in the Soviet Union, with some attention to Russian foreign affairs.

168-S. Institute on World Affairs (3) Summer

Contemporary problems in international relations.

181. Supervisory Staff and Employee Training (3) II
(Same course as Business 155)

Training as a management function and as an aspect of communication; operating methods and structure of training departments; types of training; use of community facilities; evaluation of training results. Projects designed to meet special student needs. Not open to students with credit for Business 155.

182. Techniques of Administrative Analysis (2) II

Areas and problems of administrative research; methods of analyzing structures and procedures in organizations; planning and administration of programs; design of forms; job classification and salary surveys; preparation of administrative reports.

183. Case Studies in Public Administration (3) II

Analysis, by case studies, of management problems in public agencies and the organization and methods techniques used to solve them. Practical limitations upon the use of these techniques. Prerequisite: one course in public administration or permission of instructor.

E-187. Principles of Planning (2 or 3) I (Extension)

An introduction to community planning: regional, county, and city. Consideration of the Master Plan, including its purposes, contents, and method of adoption.

E-188. Training Methods in Business and Government (3) (Extension)
(Same course as Business E-156)

Preparation of supervisors and others to teach employees. Development of course outlines, lesson plans, training aids, and tests; emphasis on student practice in demonstration teaching. Not open to students with credit for Business E-156. Prerequisite: permission of instructor.

189. Public Welfare Administration (3) II (Same course as Sociology 189)

The philosophy of modern public welfare and the structure of public welfare agencies; administrative techniques, including personnel administration, federal-state-local relationships, finances. Prerequisites: Political Science 140A and 140B, or 147A and 147B, or Sociology 190, or permission of instructor. Not open to students with credit for Sociology 189.

191. Field Studies in Government (3) II, Summer

Study of organization, policies and functions of selected government agencies. Discussion by responsible officers and inspection of work operations and facilities in management, public safety, public works and utilities, and other major governmental operations. Prerequisite: permission of instructor.

E-192. Finance Administration (2 or 3) I (Extension)

Principles and practices studied from the administrator's viewpoint. Problems of revenue, debt and treasury management, current and capital budget preparation and administration; purchasing and stores supervision; accounting and control and financial reporting.

E-193. Governmental Budgeting (2 or 3) I (Extension)

Procedures for budget preparation including expenditure and revenue estimating; budgetary studies; capital budgeting; problems in administrative and legislative consideration of the budget; consideration of performance budgeting techniques and practice.

197. Investigation and Report (3)

Analysis of special topics.

198. Internship in Public Administration (2-6) I, II

Students will be assigned to various government agencies and will work under joint supervision of agency heads and the course instructor. Participation in staff and internship conferences. Admission by permission of the instructor.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

200A-200B. Seminar in Government (2-2) Year, I, II

290. Bibliography (1)

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

291. Problem Analysis (3) I, II

Analytical treatment of selected problems in political science. Review of methods for investigation and reporting of data. Consideration of problems in preparation of project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with the department chairman and instructor.

299. Thesis (3)

Guidance in the preparation of a project or thesis for the master's degree.

PSYCHOLOGY

IN THE DIVISION OF SOCIAL SCIENCES

Major

A *major in arts and sciences* is offered in *psychology* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Two plans are provided for the major: one for those students expecting to pursue the study of psychology beyond the A.B. degree; the other for those students who wish to extend their general education in the field of psychology.

Lower division requirements for all majors: Psychology 5 and 6. Recommended selection of courses in related fields: six units in biology and/or zoology; three units in philosophy; and six units in anthropology and/or sociology.

The upper division requirements for each major will be determined by the plan selected by the student, but a minimum of 24 upper division units in psychology is required for a major.

Psychology majors are not required to complete a minor.

A *teaching major:* a major in psychology may be combined with two teaching minors for a general secondary credential. Refer to the outline of requirements for this credential.

Minor

A *minor in arts and sciences* is offered in psychology. The minor consists of 15 to 22 units in psychology, nine units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in psychology.

Plan A Major

Plan A is for a nonprofessional major in psychology and is designed to provide the student with a greater understanding of his expanding group relations leading to happy and effective family and community living. The recommended pattern of courses for this program is not designed to facilitate graduate and professional study in psychology.

The upper division requirements for Plan A majors: Psychology 106, 131, 145, and electives to complete the major. It is expected that each student under Plan A will select, with the assistance of his adviser, a pattern of courses in line with his particular objectives in pursuing Plan A. For most students in Plan A, the following courses will be found particularly helpful: Psychology 105A, 107, 122, 150, and 152.

To facilitate the purpose of Plan A the following courses in other departments are recommended as electives: Anthropology 1A-1B; Biology 1 or Zoology 1; Economics 1A-1B and 102; Health Education 90; Philosophy 1A-1B; Biology 160 and Zoology 165; and courses in home economics.

Plan B Major

The purpose of Plan B is to facilitate the specific preparation of those students who wish to pursue graduate and professional preparation in clinical, industrial and personnel, and theoretical-experimental psychology. To this end, three separate programs are suggested under Plan B to provide an undergraduate basic preparation for further study in these fields.

Upper division requirements for all Plan B majors: Psychology 104A, 105A, 160A or 160B, and additional courses to complete the major selected from one of the groups listed below. For each of the three patterns of special preparations under Plan B, the following courses are recommended:

Preclinical: Psychology 105B, 106, 145, 150, 151, 152, 160A, 175, 178. The following courses are recommended in other departments: Anthropology 1A-1B; Biology 3 and 4, or Zoology 8A-8B; Philosophy 1A-1B or 3A-3B, 20, and 129; Sociology 135 and 170; Speech Arts 176 or 179A-179B; and Zoology 165. A natural science minor is recommended.

In selecting courses and choosing electives, the student is urged to consult his adviser and the catalog on the requirements for special secondary credentials for school psychometrist and for correction of speech defects.

Pre-industrial and personnel: Psychology 121, 122, 124, 131, 145, 152, 160B. The following courses are recommended in other departments: Business 153 and 154; Economics 1A-1B, 100A, 150, 151, 170 and 185; Philosophy 20; Political Science 144, 145; Sociology 50, 51; six units selected from Sociology 135, 170, 180, 190; and Speech Arts 4; a minor in business, economics, political science, or sociology is recommended.

Theoretical-experimental: Psychology 104B, 140, 145, 150, 160A, 160B, 175, 177, and 178. The following courses are recommended in other departments: Chemistry 2A-2B; foreign language; Mathematics 1, 3A, and 3B; Philosophy 1A, 20, and 137; Physics 2A-2B and 3A-3B; Zoology 1, 8A-8B, 100, and 165. A mathematics or natural science minor is recommended.

The Master of Arts Degree

The master of arts degree is offered in the department as part of the fulfillment of requirements for the school psychologist credential. It is also possible to obtain a master's degree if one obtains a school psychometrist credential. Refer to these credentials and to the master of arts degree.

Before beginning work which can count toward meeting requirements for a master's degree in psychology, the student must

(1) Have completed 24 units of upper division work in psychology, including Psychology 104A, 105A, and 160A or 160B, or the equivalents,

(2) Have an over-all grade point average of 2.0 in his last 60 units of work,

(3) Have a percentile rank of 50 or higher on the psychology department comprehensive examination "total."

Students who plan to specialize in industrial or personnel psychology must complete satisfactorily the following courses (or their equivalents), either as a part of the undergraduate or graduate work: Psychology 104B and Psychology 178.

Students who plan to specialize in any other phase of psychology must complete satisfactorily the following courses (or their equivalents), either as a part of the undergraduate or graduate work: Psychology 104B, 160A, 160B, 175, 177, and 178.

Lower Division Courses

***1. General (3) I, II**

An introduction to some of the facts, principles, and concepts which are basic to understanding human behavior.

2. Psychology Laboratory (1) (Not offered 1955-56)

Application of experimental methods to psychological problems. Includes design and execution of experiments. One lecture and three laboratory hours. Prerequisite: Psychology 1.

5. Principles of Psychology: Basic Organization of Behavior (3) I, II

The basic sensory, neural and motor mechanisms and their functions in human behavior. Prerequisite: Psychology 1 and sophomore standing.

6. Principles of Psychology: Learning and Integrated Behavior (3) I, II

Attending, perceiving, and learning, including social learning, personality development, and conditions of efficient work. Prerequisite: Psychology 1 and sophomore standing.

***11. Applied Psychology (3) I, II**

A survey of the application of the basic principles of psychology to business, education, industry, government, law, medicine and related fields. Prerequisite: Psychology 1.

***12. Mental Hygiene (3) I, II**

An examination and interpretation of the factors which go into the making of the person as he adapts himself to the social world about him. The development of the normal personality. Prerequisite: Psychology 1.

Upper Division Courses

104A. Statistical Methods in Psychology (3) I, II

An introduction to the use of quantitative methods in psychology, with emphasis upon measures of central tendency and variability, graphic methods and percentiles, linear correlation, and the applications of the normal probability curve. Prerequisite: Psychology 1. Not open to students with credit for Economics 140 or Sociology 103.

104B. Advanced Statistics (3) II

A further study of quantitative methods in psychology with particular emphasis on methods of correlation, chi-square, and contingency, and in introduction to the analysis of variance. Prerequisites: Mathematics C and Psychology 104A, or permission of instructor.

105A. Introduction to Psychological Testing (3) I, II
(Same course as Education 105A)

The basic principles of testing. The selection and critical evaluation of group tests of intelligence, personality, aptitude, interest and achievement. Prerequisite: one of the following courses: Psychology 104A, Education 102A, 102D, 184C, or a semester of statistical methods in any other department. Not open for credit to students with credit for Education 105A.

105B. Individual Psychological Testing (3) I, II

The principles of individual testing. Instruction and practice in the administration of the Stanford-Binet, Wechsler-Bellevue, similar tests. Prerequisite: Psychology 105A and permission of instructor.

***106. Developmental Psychology (3) I, II**

A study of the psychological development of the normal individual from conception through childhood, adolescence, maturity, and old age. Stress is laid upon the interdependence of the various periods of the individual's life. Prerequisite: Psychology 1.

***107. Psychology of Later Maturity (3) II**

The psychological, physiological, and sociological factors influencing behavior in the later years of life. Prerequisite: Psychology 1.

121. Personnel and Industrial Psychology (3) I, II

Psychological principles applied to problems of selection and assignment of industrial personnel, employee training, and fatigue. Prerequisite: Psychology 104A, or Economics 140, or Sociology 103.

122. Public Opinion Measurement (3) I (Same course as Journalism 122)

The history, methods, and problems of public opinion and attitude measurement. Emphasis will be placed upon the polling of consumers and voters. Students will be given field experience. Not open to students with credit for Journalism 122.

124. Engineering Psychology (2) II

Psychological problems of man-machine systems. Visual, auditory, and other sensory factors involved in the inter-relations between man and machines. Motion-study, work arrangement, fatigue, and environmental influences in relation to production. Prerequisite: Psychology 1 and upper division standing.

130. Educational Psychology (2) I, II (Same course as Education 130)

To develop understanding of the applications of psychological research for effective classroom teaching. Observation and field work required. Prerequisite: Psychology 1. Not open to students with credit for Education 130.

131. Psychology of Personality (3) I, II

The principles of personality and their application to problems of adaptation and mental hygiene. Prerequisite: one full year of psychology or equivalent.

140. Physiological Psychology (3) II

The neurophysiological basis of behavior, with particular attention to the psychophysiology of sensory and motor processes, emotion, bodily needs, and learning. Prerequisites: Psychology 5 and 6; or Psychology 5 or 6 plus six units in biological sciences; or nine units in biological sciences.

***145. Social Psychology (3) I, II** (Same course as Sociology 145)

The major problems and findings concerning group behavior and group membership, the socialization of the individual, and processes of social interaction. Not open to students with credit for Sociology 145.

150. Abnormal Psychology (3) I, II

The psychology of behavior disorders, with emphasis on the amentias, neuroses, and psychoses. Prerequisite: one full year of psychology.

151. Introduction to Clinical Appraisal (3) I, II

A study of diagnostic devices in psychology, tests of clinical significance, ratings, interviewing for securing information. Projective and case study analyses; problems of insight, rapport, empathy, and prediction of individual behavior. Prerequisites: Psychology 105A and 150, or Education 181 plus Education 102A or 102D or 184C; one additional course in psychology selected from the following: Psychology 106, 131, 140, 105A, or 150.

152. Introducton to Methods of Counseling (3) II

An introduction to problems and methods of counseling and adjustment. The utilization of psychological principles and techniques in dealing with various types of guidance situations. Prerequisites: senior or graduate standing in psychology or pre-social work, and permission of the instructor.

160A. Experimental Psychology (3) I

Demonstrations of the principles and conditions of learning, perceiving, problem solving, and thinking. Methodology and design of experiments. Two laboratory sessions and one seminar period per week. Prerequisites: Psychology 5, 6, and 104A.

160B. Experimental Psychology (3) II

Demonstration of laws governing various sensory experience and motor activities. Experiments in space perception, errors of judgment, and conditions of work and fatigue. Two laboratory sessions and one seminar period per week. Prerequisites: Psychology 5, 6, and 104A.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

170. Comparative Psychology (3) (Not offered 1955-56)

A study of the behavior of animals with a view to gaining a better understanding of human behavior. An analysis of the leading experimental work on sensory discrimination, learning, and intelligence of each animal group, from amoeba to man. Prerequisites: Psychology 5 and 6.

175. Theories of Learning (3) I

A critical study of the facts, principles, and major theories of learning. Prerequisites: Psychology 1, 5, 6, 104A, or consent of the instructor.

177. History of Psychology (3) I

A survey of the historical background of modern psychology. Limited to psychology majors with senior standing and graduate students.

178. Theories of Personality (3) II

Integration of the findings from perception, learning, motivation, and from physiological and social psychology through a systematic treatment of personality theories and of related experimental data. Prerequisite: major in psychology with senior or graduate standing.

180-S. Contemporary Problems in Psychology (1) Summer

A series of six weekly lectures by visiting psychologists on subjects related to current research problems. Reading and reports required of students enrolled for credit. Enrollment for credit limited to upper division and graduate majors in psychology or by special permission of instructor. Lectures open to the public. May be repeated to a total of three units.

191. Practicum in Clinical Psychology (1-6) I, II

A practicum in mental testing, clinical psychology, and group counseling. Prerequisites: limited to second semester seniors with a psychology major and to graduate students in psychology, with appropriate qualifications in a field of professional skill, and approved by the practicum committee of the Psychology Department.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisites: senior standing and permission of instructor.

Graduate Courses

201. Seminar (3) I

A review, integration, and supplementation of the student's knowledge of psychology. Prerequisites: 24 units in psychology, which may include educational psychology courses in the Education Department.

205. Advanced Mental Testing (3) II

The theory of mental testing and a comprehensive survey of the various verbal and nonverbal individual mental tests. Prerequisites: Psychology 104A, 105A, 105B, and 151, or equivalents.

211. Advanced Clinical Psychology (3) I

A seminar in psycho-diagnostics, counseling, and clinical research. Prerequisites: Psychology 151 and 152, or equivalents.

233. Guidance Counseling Techniques (3) I, II (Same course as Education 233)

Designed for school counselors. To stress the understandings and procedures necessary for effective interviewing. Prerequisite: Education 230, or equivalent. Not open to students with credit for Education 233.

234. Projective Psychology (3) I

Introduction to the theory and principles underlying use of projective techniques by clinical psychologists; a review of the structure and dynamics of personality as interpreted by projective devices. Prerequisites: Psychology 104A, 105A, 105B, and 151, or equivalents.

235. The Rorschach Method (3) II

A seminar and practicum in basic administration and scoring of the Rorschach Test, with critical appraisal of the problems involved in estimations of reliability and validity of this technique. Prerequisites: Psychology 104A, 105A, 105B, 151, and 234, or equivalents.

290. Bibliography (1) I, II

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3) I, II

Guidance in the preparation of a project or thesis for the master's degree.

PUBLIC ADMINISTRATION

IN THE DIVISION OF SOCIAL SCIENCES

The program of training in public administration can be obtained by completion of the major in public administration or through a major in political science. In either case, the student will follow a sequence of work dealing with the principles and problems of organization for the carrying out of the functions of government, and public management. This latter aspect deals primarily with the directing and coordinating of work operations, the staffing of public agencies, the processes of budgeting and financial control, and the dynamics of management, namely planning, research, communications, leadership, and human relations in the administrative process.

The public administration curriculum may be adapted to several goals, one being the taking of junior administrative examinations for entrance into the government service at the local, state or federal levels, and preparation for advancement up the governmental ladder. It is designed also to prepare students for graduate work in public administration.

Selected students may participate in an internship program in local government offices. Working under the close supervision of governmental officials and the adviser in public administration, the intern deals with actual administrative procedures and problems in government.

Major in Public Administration

The *major in public administration* is granted with the A.B. degree. The major is in addition to 45 units in general education courses.

Specific requirements for the major: Lower division: Political Science 71A-71B, Economics 1A-1B. Upper division: 36 upper division units, including Political Science 140A-140B and 197 or 199, Economics 131, and 140. Four additional units in upper division electives are required to complete the minimum of 40 upper division units required for graduation.

Students planning to enter the field of public administration should consult with an adviser in public administration.

Minor

A *minor in public administration* is offered in arts and sciences for students majoring in fields other than political science or public administration. This minor consists of Political Science 71A-71B, 140A-140B, and three units of upper division work selected from Political Science 197, 199, or other political science course in the upper division.

Certificate Programs in Public Administration and in Public Welfare Administration

Certificate in Public Administration: Admission to candidacy for the certificate in public administration is open to all public service employees without reference to previous academic experience. Candidacy will be established by approval of the Coordinator of Public Administration. To receive the certificate in public administration, the candidate must complete an approved pattern of eight courses, with a grade point average of 1.5.

Certificate in Public Welfare Administration: Admission to candidacy for the Certificate in Public Welfare Administration will be established by approval of the Coordinator of Public Administration. To receive the certificate in Public Welfare Administration, the candidate must complete an approved pattern of 30 units in courses at San Diego State College with a grade point average of 2.0. Prerequisites for admission to candidacy are 20 units in approved social science courses.

Candidates for the certificate programs may obtain further information on requirements by writing to the Coordinator of Public Administration, San Diego State College.

RECREATION

IN THE DIVISION OF HEALTH EDUCATION, PHYSICAL EDUCATION AND RECREATION

Major

A *major in recreation* is offered for the A.B. degree. The recreation curriculum is designed to provide a program of training for recreation and camp leadership, work with youth groups, and related activities.

Specific requirements for the major: lower division: Sociology 50 and 51; Physical Education 53. In addition, men are required to complete Physical Education 63. Women must include Physical Education 2A, 5A-5B and 6. Required in related fields: 12 units selected from the fields of art, industrial arts, music, physical education, and speech arts, with a maximum of five units in any one field. Courses in related fields which are designated as general education courses may be applied toward general education requirements. Upper division: 36 units distributed as follows: Recreation 165, 170A-170B, 184A-184B; Psychology 106, 145; Education 174; Physical Education 161; Political Science 143; nine units selected from Sociology 110, 174, 185, 187, 190. Four additional upper division units in electives are required to complete the 40 upper division units for graduation.

Students should consult with the adviser in the Recreation Curriculum for selection and arrangement of courses.

Minor

A *minor in arts and sciences* is offered in *recreation.* The minor consists of 15 to 22 units to include the following courses: lower division: two units of physical education activity courses; Physical Education 53; and two units chosen from Art 61B, or fields of dance, drama, or music. Upper division requirements: Recreation 165, 170A-170B, and 184A or 184B. Recommended: Physical Education 161. Consultation with the chairman of the department is advised.

Upper Division Courses

165. Administration of Community Recreation (3) II

The principles of organization and promotion of leisure time and recreation activities. Course content covers growth of the recreation movement, administration of areas and facilities, program of activities, features, services, organization and administration problems. A required course for recreation minors.

170A-170B. Recreational Leadership (2-2) Year, I
(Same course as Physical Education 170A-170B)

Principles and practices in recreational leadership. Methods of instruction and special techniques in the activities of the recreation program. Attention to crafts, music, social programs, drama, special projects, dance, sports, camp-craft and outdoor education. Courses may be taken separately. Not open to students with credit for Physical Education 170A-170B.

184A-184B. Field Work in Recreation (3-3) Year, I

Observation and participation in supervised group activities in the field. Practical experience in the various public and semi-public community recreation agencies. For recreation majors and minors. Others only with permission of instructor.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

204. Problems in Recreation (2) (Alternate years)
(Same course as Physical Education 204)

A survey of current problems facing the recreation profession, a review of literature, discussion of trends and observation of school situations together with the analysis and evaluation of actual problems. Written reports are required. Not open to students with credit for Physical Education 204.

ROMANCE LANGUAGES

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major

A *major in arts and sciences* is offered in *Romance languages* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: French 1, 2, 3, 4, 5, 6, and Spanish 1, 2, 3, 4, 5, 6. Recommended: History 4A-4B or 8A-8B (for those who emphasize Spanish in the upper division). Six units from courses 1, 2, 3, 4 in French or Spanish may be applied toward general education requirements. Upper division requirements: a minimum of 24 upper division units in French and Spanish including French or Spanish 198. At least nine units of upper division courses must be taken in each language. A person majoring in Romance languages must have a minor to be decided upon in consultation with his major adviser.

A *teaching major in Romance languages* is offered for the junior high and general secondary credentials. For specific information, refer to these credentials.

Minor

A *minor in arts and sciences* is not offered in Romance languages, but minors may be taken in French or Spanish.

Graduate Courses

290. Romance Language Bibliography (1) I

Exercises in the use of basic reference books, journals, and specialized bibliographies in the field of the Romance languages. Prerequisite: nine units of upper division French or Spanish and graduate status.

SOCIAL SCIENCE

IN THE DIVISION OF SOCIAL SCIENCES

Major

A *major in arts and sciences in social sciences* is offered for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: six units in each of three of the following fields, the selection to be made on advice of the division adviser: (1) economics, (2) geography, (3) history, (4) political science, and (5) sociology-anthropology. Upper division requirements: a minimum of 30 units selected with the approval of the division adviser, as follows: 6 to 15 units in each of three fields, provided that one of these fields be different from the fields selected for lower division work. Twelve units in social science courses may be applied toward social science requirements in general education. Students majoring in social science are not required to complete a minor.

A *teaching major in social sciences* is offered for the junior high school and general secondary school credentials. For statement of requirements, refer to these credentials.

Minor

A *minor in arts and sciences* is not offered in the social sciences.

A *teaching minor in social science* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

SOCIAL SERVICE CURRICULUM

(PRESOCIAL WORK)

IN THE DIVISION OF SOCIAL SCIENCES

The professional curriculum in social service prepares for admission to graduate work in recognized American schools of social work. This curriculum should be pursued by those who plan careers in federal, state and local welfare work; social work in public schools including preparation for a teaching credential; family and children's private case work agencies; social settlement work; county probation work; child welfare agencies; statistical and investigational work in private and public agencies; work in public institutions for the defective and delinquent; medical social service and psychiatric social work in hospitals and clinics; executive positions in social work; and social work in numerous other organizations.

The lower division requirements of the arts and sciences curricula include the general requirements of recognized professional schools of social work and should therefore ordinarily be met in full.

Major in Social Service

A *major in social service* is offered for the A.B. degree. The major is in addition to 45 units in general education courses.

Specific requirements for the major: Lower division: Sociology 50 and 51, Economics 1A-1B, Political Science 71A-71B or 1A-1B, and Psychology 11 (21 units). Biology 3 or 4 should be taken as general education courses in natural science. Recommended: courses from anthropology, foreign language, and speech arts. Upper division requirements: Sociology 103, 187, 190, and an upper division elective (12 units); Economics, nine units selected from 102, 131, 150, 170, 185, 195; Political Science, six units selected from 140A, 140B, 142, 143; Psychology 145, 150, and an elective chosen from Psychology 106, 107, 151, or 152 (nine units); Zoology 165 (two units). An additional two units in upper division electives must be taken to complete the 40 upper division units required for graduation. Twelve units of social science in the major field may be counted as general education in social science.

Students should consult with the adviser in the social work curriculum for selection and arrangement of courses.

Certificate in Public Welfare Administration

A certificate in Public Welfare Administration is available to persons professionally engaged in the field of social work. This program is described under the Public Administration Curriculum.

SOCIOLOGY

IN THE DIVISION OF SOCIAL SCIENCES

Major

A *major in arts and sciences,* is offered in *sociology* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Sociology 50 and 51. Upper division requirements: A minimum of 24 upper division units in sociology, including Sociology 103, 110, 135, 152, 153, and 173 or 174. Students majoring in sociology are required to complete a minor.

A *teaching major* is not offered in sociology; however, courses in sociology may be used as part of the *social science major* for the junior high school credential or the general secondary credential. For specific information, refer to the outlines of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in *sociology*. The minor consists of 15 to 22 units in sociology, nine units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in sociology; however, courses in sociology may be used as part of the *social science minor* for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

***35. Courtship and Marriage (3) I, II**

Emphasizes preparation for successful marital adjustment by presenting materials that will help students to solve their own courtship, marriage, and family problems. A general education course in social science and also in family life education. Not open to students with credit for Sociology 135 or Home Economics 135 or other course in Marriage and the Family.

***50. Contemporary Social Problems (3) I, II**

Survey of modern social problems recognizing the sociological factors involved. Emphasis on the scientific method of approach. An evaluation of various causes and solutions of problems. A prerequisite for upper division courses in sociology. Sophomore standing required.

***51. Principles of Sociology (3) I, II**

The development and use of the concepts applied to sociological analysis; the effects of isolation and social contacts, interaction, processes, forces, controls, collective behavior and social progress. A prerequisite for upper division courses in sociology. Sophomore standing required. Prerequisite: Sociology 50.

Upper Division Courses

103. Elementary Social Statistics (3) I, II

Analysis and presentation of elementary material in the fields of sociology and social work. Tabular and graphic presentation, analaysis of frequency distributions, trends, simple correlation, sampling and reliability techniques. Prerequisites: Mathematics A-B and Sociology 50 and 51. Mathematics C or 7A recommended. A prerequisite for most upper division sociology courses. Not open to students who have credit for Economics 140 or Psychology 104A or 104B.

***110. Race Relations (3) I**

A study of the Negro, Oriental, and other minority groups in the United States. A study of mental capacities, education, cultural achievement, family life, delinquency and other social factors of each group. Race prejudice, racial consciousness, theories of racial superiority and inferiority will be considered. Prerequisite: Sociology 50, 51.

120. Industrial Sociology (3) II

Analysis of group relationships within economic organizations. Problems of leadership, morale and conflict. Some attention to the sociology of occupations and professions. Prerequisites: Sociology 50, 51.

***135. Marriage and the Family (3) I, II**
(Same course as Home Economics 135)

Background factors predictive of happy and successful marriages; family forms in other cultures; principal areas of adjustment in marriage; parent-child problems; the changing adolescent; causes and results of divorce; the family of tomorrow. Not open to students with credit for Sociology 35 or Home Economics 135 or other course in marriage and the family.

***145. Social Psychology (3) I, II** (Same course as Psychology 145)

The major problems and findings concerning group behavior and group membership, the socialization of the individual, and processes of social interaction. Not open to students with credit for Psychology 145.

146. Collective Behavior (3) II

The basic processes of social behavior in masses and groups, including crowd behavior, fads, fashions, crazes, panics, rumors; sects and cults; heroes and scapegoats; social movements; effects of mass communication. Prerequisite: Sociology 51 or 145, or Psychology 145.

152. History of Social Thought (3) I

The origin and development of social theory in Europe and America; consideration of the fields and specialization and research in contemporary American sociology. Prerequisite: Sociology 50, 51.

153. Modern Social Theory (3) II

A study of theories basic to modern sociological research, including the viewpoints of European and American thinkers. Prerequisites: Sociology 50, 51, and 152, or permission of instructor.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

170. Social Disorganization (3) I

Survey of many alleged abnormal phenomena in society as seen in society today in various forms of individual, family, community and world disorganization, such as crime, prostitution, extreme alcoholism, migratory workers, divorce, revolution and war.

173. Criminology and Penology (3) I

The extent and characteristics of crime; consideration of physical, mental, economic, and sociological causes of crime; study of methods of penal discipline, prison labor, parole, and probation; programs of prevention. Prerequisite: Sociology 50 and 51, or permission of instructor.

174. Juvenile Delinquency (3) II

The nature and extent of delinquency; the causative factors involved; methods of control and prevention, with special attention to the protective and remedial measures offered by the school, home, juvenile court, correctional institutions and camps, probation and parole, and recreational agencies. Prerequisite. Sociology 50, 51, or permission of the instructor.

176. Contemporary Correctional Administration (3) II

A study of the problems encountered in administering modern correctional programs, including juvenile and adult probation, courts and correctional institutions, forestry and road camps, detention homes, and jails. Prerequisite: Sociology 173 or 174, or consent of instructor.

180. Population Problems (3) I

Problems of population increase, migration, shifts in composition of population relative to age, sex, and racial distribution. Population practices and theories. Biological and geographical aspects of population problems. International population movements. Prerequisite: Sociology 50, 51 and 103.

185. Community Welfare Organization (3) II

An analysis of the structure and process of community organization for social welfare as well as the functional relationships between public and private welfare agencies. Field work will be required to study some of the social agencies of San Diego. Prerequisites: Sociology 50, 51 and Sociology 103, or permission of instructor.

187. Urban Sociology (3) II

A study of the structure and function of the modern city; types of neighborhoods; forms of recreation; social forces in a metropolitan area; types of urban personalities and groups; rural-urban conflicts of culture. Practical field studies required. Prerequisites: Sociology 50, 51 and 103.

189. Public Welfare Administration (3) I

(Same course as Political Science 189)

The philosophy of modern public welfare and the structure of public welfare agencies; administrative techniques, including personnel administration, federal-state-local relationships, finances. Prerequisites: Sociology 190, or Political Science 140A and 140B, or Political Science 147A or 147B, or permission of instructor. Not open to students with credit for Political Science 189.

190. Fields of Social Work (3) I

A survey of the nature of social work and the various kinds of social work which are found in the modern urban life. The student is familiarized with the various social agencies in the community, their problems and methods of work, by readings and field trips. Volunteer social work in some social agency recommended. Prerequisites: Sociology 50, 51.

192. Social Work and the Law (3) II

Trends and current developments in social legislation; laws regarding poor relief, child labor, and the family, including marriage and divorce laws, illegitimacy, adoption, guardianship. Prerequisite: Sociology 190 or permission of instructor.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

200A-200B. Seminar (2-2)

230. Principles of Social Case Work (3) I

A study of the principles and practices of social case work; problems of case recording and analysis. Directed field work and case studies. Prerequisites: Sociology 190 or Psychology 152 or Education 233.

231. Field Work in Social Case Work (3) II

Supervised practice in local social work agencies. Prerequisite: Sociology 190 and 230.

235A-235B. Case Work Supervision (3-3) Year

Discussion and analysis of cases and problem situations encountered by social case work supervisors. Review of basic case work techniques and principles of personnel supervision as applied to social case work. Prerequisite: Sociology 230 or permission of instructor.

290. Bibliography (1)

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

Guidance in the preparation of a project or thesis for the master's degree.

SPANISH

IN THE DIVISION OF LANGUAGE AND LITERATURE

Major

A *major in arts and sciences* is offered in *Spanish* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: In the major, Spanish 1, 2, 3, 4, 5, 6; in other foreign languages, French 1, 2, or German 1, 2, or Latin 1, 2. Six units in elementary French or German may also be applied toward general education requirements. Recommended: History 4A-4B or 8A-8B. Upper division requirements: A minimum of 24 upper division units, at least 21 units of which must be in Spanish, including Spanish 198. The remaining three units may be selected from Anthropology 151B; Geography 118, 119, 120; History 161, 162; Political Science 165; Spanish 115 or 116; or Comparative Literature 101A, 140A-140B, 152A-152B, 159, in consultation with the Chairman of the Department. A person majoring in Spanish must have a minor to be decided upon in consultation with his major adviser.

A *major in arts and sciences* is offered in *Romance languages*. For specific information, refer to Romance languages in the section on Announcement of Courses.

A *teaching major* is offered in *Spanish or Romance languages* for the junior high school and general secondary credentials. For specific information, refer to these credentials.

Minor

A *minor in arts and sciences* is offered in *Spanish*. The minor consists of 15 to 22 units in Spanish, six units of which must be in courses carrying upper division credit.

A *teaching minor* is offered in *Spanish* for the general secondary, the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to these credentials.

Lower Division Courses

***1. Elementary (3) I, II**

Pronunciation, oral practice, readings on Hispanic culture and civilization, minimum essentials of grammar.

***2. Elementary (3) I, II**

Continuation of Spanish 1. Prerequisite: Spanish 1 or one year of high school Spanish.

***3. Intermediate (3) I, II**

Reading in Spanish of cultural material, short stories, novels or plays; oral practice; outside reading with oral and written reports. Prerequisite: Spanish 2 or two years of high school Spanish.

***4. Intermediate (3) II**

Continuation of Spanish 3. Prerequisite: Spanish 3 or three years of high school Spanish.

5. Intermediate (2) I, II

A practical application of the fundamental principles of grammar by means of oral and written work based on Spanish texts. Prerequisite: Spanish 2 or two years of high school Spanish.

6. Intermediate (2) II

Continuation of Spanish 5. Prerequisite: Spanish 5 or three years of high school Spanish.

10. Conversation (2) I

Practice in the spoken language; practical vocabulary; conversation on assigned topics; simple dialogues and plays. Prerequisite: Spanish 2 or two years of high school Spanish.

11. Conversation (2) II

Continuation of Spanish 10. Prerequisite: Spanish 10, or Spanish 3, or three years of high school Spanish.

***15. Spanish Civilization (2) I**

The major currents and characteristics of Hispanic life and culture, as expressed through the centuries in literature, art, philosophy, music and science. Conducted in English. No prerequisite.

***16. Spanish Civilization (2) II**

Continuation of Spanish 15 with emphasis on Spanish America. No prerequisite.

50. Spanish Commercial Correspondence (3) I

A one-semester intermediate course in Spanish composition, directed along the line of commercial correspondence. A practical course, with translation of business letters, and supplementary reading in Spanish on commercial subjects. Prerequisite: three years of high school Spanish, or completion of Spanish 3 or 5.

Upper Division Courses

101A-101B. Conversation and Composition (3-3) Year, I

Translation into Spanish of moderately difficult English prose passages. Free composition in Spanish. Outside reading of modern Spanish plays, with written reports in Spanish. Oral practice in colloquial Spanish with extensive use of phonograph recordings. Prerequisite: Spanish 4 and 6, or their equivalent, with a grade of C, or permission of instructor.

102A-102B. Introduction to Spanish Classics (3-3) Year, I

Reading from several types of classical literature. Lazarillo de Tormes and other novels of Roguery; selections from Don Quixote, and the Cien Mejores Poesias Castellanas; one drama each from the works of Lope de Vega, Calderon, Alarcon, and Moreto; collateral reading and reports. Prerequisite: Spanish 4 and 6, or their equivalent, with a grade of C.

104A-104B. Spanish-American Literature (3-3) Year, I (Offered 1956-57)

Reading from representative Spanish-American authors during the colonial, revolutionary and modern periods. Lectures, class reading, collateral reading and reports. Prerequisite: Spanish 4 and 6, or their equivalent, with a grade of C.

105A-105B. Modern Spanish Drama (3-3) Year, I (Offered 1956-57)

The development of the drama of Spain from the beginning of the nineteenth century to the present time. Prerequisite: Spanish 4 and 6, or their equivalent, with a grade of C.

110A-110B. Novel and Short Story in Spain (3-3) Year, I (Offered 1957-58)

The development of the novel and short story in Spain from 1830 to the present time. Prerequisite: Spanish 4 and 6, or their equivalent, with a grade of C.

***115. Spanish Civilization (2) I**

An advanced course in Hispanic culture of the past and present, with emphasis on the arts, philosophy, and literature. Lectures, class discussions, outside readings, written reports on individual topics. Conducted in English. Prerequisite: sophomore standing.

***116. Spanish Civilization (2) II**

Continuation of Spanish 115 with emphasis on Spanish America. Prerequisite: sophomore standing.

150. Spanish Phonetics (3) II

A theoretical and practical study of Spanish phonetics. A study of vowels, consonants, isolated words, and phonic groups. The principles of versification, and exercises in intonation. Especially recommended for prospective teachers of Spanish. Prerequisites: Spanish 4 and 6, or their equivalent, with a grade of C.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

198. Comprehensive Reading and Survey Course (3) II

Designed to fill up the gaps in the reading done in courses. Class meeting once a week for guidance, reports, and quizzes. Required of all seniors majoring in Spanish.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

201. Old Spanish (2) I

A study of the language and literature of Spain from the 12th to the 15th centuries. Prerequisite: nine units of upper division Spanish and graduate status.

204. Seminar in Spanish-American Literature (2) II

Intensive investigation of some phase of Spanish-American literature. A single country, an author, or some special problem will be studied and reported upon. Prerequisites: nine units of upper division Spanish and graduate status.

290. Bibliography (1) See Romance Languages

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff, to be arranged with department chairman and instructor.

299. Thesis (3)

Master's degree candidates in Spanish are expected to substitute a comprehensive examination for the thesis. In unusual cases a student may write a thesis with the permission of the department.

SPEECH ARTS

IN THE DIVISION OF LANGUAGES AND LITERATURE

Major

A *major in arts and sciences* is offered in *speech arts* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division: required in general education: Speech Arts 3. Required in the major: a minimum of 13 units of lower division courses in speech arts, specializing in the fields of dramatic art, radio, public speaking, or a guided combination of the three. Upper division requirements: a minimum of 24 upper division units, including Speech Arts 150, with an emphasis of 12 units in one area of concentration (theater, radio, public speaking, or speech pathology). A minor is suggested, but not required.

A *teaching major in speech arts* is offered for the general secondary credential and the special secondary credential in speech arts; and for the special secondary credential in correction of speech defects.

Minor

A *minor in arts and sciences* is offered in *speech arts*. The minor consists of 15 to 22 units in speech arts, nine units of which must be in courses carrying upper division credit.

A *teaching minor in speech arts* is offered for the general secondary, special secondary, general elementary, and kindergarten-primary credentials. For statement of requirements, refer to these credentials.

Lower Division Courses

1. Voice and Diction (3) I

Exercises and drills to improve the quality, flexibility and effectiveness of the speaking voice leading to good usage in standard American speech. Preparatory to further courses in public speaking and dramatic art.

1-X. Speech for International Students (3) I

Training in production of American speech sounds, blending and assimilation, American prose rhythm and oral communication. Emphasis on clarity and intelligibility. Practical work in aural comprehension. Prerequisite: designation by speech testing committee. (Two units of this course may be counted as fulfilling the general education requirement in Speech Arts 3.)

2. Oral Communication Laboratory (1) I, II

Those who fail the speech test must take this course concurrently with Speech Arts 3. This course provides training in articulation, voice control, vocabulary. Individual laboratory assistance on specific speech problems.

***3. Oral Communication (2) I, II**

Training in fundamental processes of oral expression; method of obtaining and organizing material; outlining principles of attention and delivery; practice in construction and delivery of various forms of speeches.

4. Extemporaneous Speaking (3) I, II

Practice in extemporaneous speaking on subjects of current interest, both national and local, with stress laid on the organization and delivery of content material. Forum discussion will provide speakers with the opportunity of assembling facts quickly to meet such questions as any audience situation might demand.

11A. Fundamentals of Interpretation (3) I, II

Application of the principles involved in "making words come alive": response to thought and mood, sensory association, emphasis, climax. Practice selections in poetry and prose.

11B. Intermediate Interpretation (3) I, II

Oral reading of various types of material suitable for popular audiences: stories, humorous sketches, light and sentimental verse. Prerequisite: 11A or 55A.

54. Stage Make-up (2) I

Practice in the application of stage make-up including straight and character. Two laboratory periods per week.

55A. Elementary Acting (3) I, II

Development of the individual's ability to express thought and emotion through the effective use of the voice and body. These fundamental skills may be applied to stage, radio, and television acting. (32 hours of laboratory required.)

55B. Intermediate Acting (3) I, II

Continuation of 55A emphasizing more emotional material from longer scenes. (32 hours of laboratory required.) Prerequisite: 55A or previous training.

56A-56B. Dramatic Production (3-3) Year, I

Technical practices and organization of production for theater and television. Practice in drafting and construction of stage scenery for the college dramatic productions. Prerequisite for 56B: 56A or permission of the instructor.

57. Elementary Stage Costume (3) II

A study of pattern drafting, draping, color harmony and the use of fabrics for stage costuming. Students will receive practical training in the construction of stage costumes. Two lecture-demonstration and recitation hours and one laboratory per week.

60A-60B. Argumentation and Debate (3-3) Year, I, II

Obtaining and organizing of evidence and the construction and use of the brief; study and discussion of current issues; the presentation of formal and informal debates. Attention to intramural and intercollegiate debating.

61A-61B-61C-61D. Intercollegiate Debate (1-1-1-1) I, II

Students are limited to four units, including lower and upper division courses.

63A-63B-63C-63D. Verse Choir (1-1-1-1) I, II

Participation in verse speaking chorus to develop quality, range of tone, and ability in dramatic visualization of poetry. Students are limited to four units, including lower and upper division courses.

81A-81B. Survey of Radio and Television Techniques (3-3) I, II

Station operation methods; techniques of announcing, acting, directing, sound effects, music integration; radio and television scripting and continuity.

82A-82B. Radio Workshop (2-2) I, II

Radio program production, with experience in announcing, recording, acting, engineering, sound effects, music, and writing for programs produced over local commercial radio stations. Four units maximum credit in 82A, 82B, 182A, 182B. Prerequisite: Speech Arts 81A or 81B, or equivalent. (Speech Arts 81A or 81B may be taken concurrently with the workshop.)

83A-83B. Television Workshop (2-2) I, II

Television program production, with experience in announcing, acting, production art, lighting, video and audio techniques, special effects, telecine, and writing for programs produced over local commercial television stations. Four units maximum credit in 83A, 83B, 183A, 183B. Prerequisites: Speech Arts 81A or 81B and Speech Arts 55A or 56A, or equivalent, and permission of instructor. (Speech Arts 81A or 81B may be taken concurrently with the workshop.)

Upper Division Courses

108. Advanced Interpretation (3) I, II

Analysis of techniques of literary composition as guides to oral interpretation. Achievements of the creative artist as they affect the interpretative artist. Prerequisite: 11A or 11B or permission of instructor.

118A. Play Analysis (3) I (Not offered 1955-56)

Deals with the one-act play and its technique. New plays are read and discussed in class during their period of development.

118B. Playwriting (3) II

Analyses of long plays. Students engage in creative writing.

140A-140B. Scene Design for Stage and Television (3-3) I, II

The application of the principles of design, color and perspective to the designing of various types of dramatic productions; the history of stage design. Students will learn to make sketches and models and paint scenery for departmental stage and television productions. Prerequisites: 56A and 56B, or permission of instructor.

142A-142B. Summer Theater Workshop (3 or 6) Summer

A theater laboratory for those who wish to devote their entire time to training and a variety of experiences in the summer theater program including acting, design, stagecraft, lighting, directing, and stage management. Prerequisite: permission of the instructor.

145. Stage and Television Lighting (3) II

Principles and practice of light, color, lighting instruments, and control equipment, including the design and planning of lighting for plays and television. Students will serve as light crews for departmental productions.

150. Phonetics (3) I, II

Auditory and kinesthetic analysis of the sounds of the English language. Valuable as a corrective course in pronounciation and articulation. Required of speech majors and those seeking the speech correction credential.

152. History and Design of Costume (stage) (3) I

A study of costume from Egypt to the present. Emphasis on the use of historical costumes on the stage. Costume designs for one stage production. Drawing and painting experience desirable but not necessary.

154A-154B. History of the Theater (3-3) Year, I, II

A study of the theater from primitive times to the present. Special attention will be given to the theater as a mirror of the social and cultural background of the various countries and periods in which it is studied. Carries aesthetics credit. (Speech Arts 154B may be taken without 154A.)

155. Advanced Acting (3) I

Problems in characterization: acting styles of the Elizabethan and Eighteenth Century periods. Prerequisite: 55A-55B or the equivalent.

156. Advanced Dramatic Production (3) II

Further study of scenery drafting and construction, with attention to the multiple-set play. Planning of scenery construction and rigging for stage and television productions. Prerequisites: Speech Arts 56A and 56B, or permission of instructor.

159. Stage Direction (3) I

Planned for prospective directors of plays in schools, colleges and community theaters. Through lectures, discussions, and exercise projects the student will become acquainted with the principles, procedure and methods of stage direction.

160. Stage Direction Laboratory (1) I, II

This will consist of experience in directing a one-act play before a departmental or public audience. It may be taken with or it may be preceded by 159. Prerequisite or corequisite: 159. May be repeated once for credit.

161A-161B-161C-161D. Advanced Intercollegiate Debate (1-1-1-1) I, II

Students are limited to four units, including lower and upper division courses.

162. Advanced Argumentation (3) I

Presents a further and more detailed study in the preparation of briefs and the organization of evidence; opportunity for participation in intramural debates, intercollegiate debate, and community speaking activity. Prerequisite: 60A or 60B or permission of instructor.

163A-163B-163C-163D. Advanced Verse Choir (1-1-1-1) I, II

Participation in verse speaking chorus to develop quality, range of tone, and ability in dramatic visualization of poetry. Students are limited to four units, including lower and upper division courses.

164-S. Verse Choir Directing (2) I, II

Organizing a given group as a verse choir, considering age, voice quality, background, selection and arrangement of material, and techniques of directing. Demonstrations and practice.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

E 175. The Role of Parents in Problems of Speech Correction (1) (Extension)

Assistance to parents in understanding the speech-handicapped child. Open to parents of children admitted to the speech clinic.

176. Problems of Speech Correction and Articulation (3) II
(Same course as Education 176)

Analysis and discussion of the major articulatory problems as encountered in public school work, particularly in California. Required of all students for the speech correction credential. (Minimum of 25 laboratory hours required.) Not open to students with credit for Education 176.

177. The Teaching of Lip Reading (2) (Same course as Education 177)

History, theory and methods of lip reading. Aids for the classroom teacher; program and materials of instruction for the specialized teacher. Opportunities for practice teaching are offered. Not open to students with credit for Education 177.

179A-179B. Nervous Speech Disorders (3-3) Year, I
(Same course as Education 179A-179B)

Clinical survey of newest methods of speech correction with special emphasis given to stuttering. (Minimum of 25 laboratory hours required per semester.) Required course for special corrective credential. Not open to students with credit in Education 179A-179B. (Speech Arts 179A is a prerequisite for 179B.)

180A-180B. Rehearsal and Performance (1) I, II

One unit of technical practice followed by one unit of acting. One unit may be repeated, making a total of three units.

181. Radio and Television Station Management and Advertising (3) I
(Same course as Business 181)

Administrative and commercial methods of radio and television station operation. Advertising trends in broadcasting, audience and program measurement, publicity and promotion; traffic. Prerequisites: Speech Arts 81A and 81B, or equivalent, and permission of instructor. Not open to students with credit for Business 181.

182A-182B. Radio Workshop (2-2) I, II

Radio program production with experience in announcing, recording, acting, engineering, sound effects, music, and writing for programs produced over local commercial radio stations. Four units maximum credit in 82A, 82B, 182A, 182B. Prerequisite: Speech Arts 81A or 81B, or equivalent. (Speech Arts 81A or 81B may be taken concurrently with the workshop.)

183A-183B. Television Workshop (2-2) I, II

Television program production, with experience in announcing, acting, production art, lighting, video and audio techniques, special effects, telecine, and writing for programs produced over local commercial television stations. Four units maximum credit in 83A, 83B, 183A, 183B. Prerequisites: Speech Arts 81A or 81B and Speech Arts 55A or 56A, or equivalent, and permission of instructor. (Speech Arts 81A or 81B may be taken concurrently with the workshop.)

184. Writing for Radio and Television (3) II (Same course as Journalism 184)

Scripts, documentaries, music, continuity for each program type. Correlates writing with radio and television acting and announcing styles. Program formats. Prerequisites: Speech Arts 81A and 81B, or equivalent. Permission of the instructor. Not open to students with credit for Journalism 184.

185. Radio Production Directing (3) I

Directing procedure for all types of radio programs. Production of radio workshop programs. Prerequisites: Speech Arts 81A and 81B, and two units from 82A-82B-182A-182B; or equivalent. Permission of the instructor.

186. Television Production Directing (3) II

Directing procedure and analysis for all types of television programs. Production of television workshop programs. Prerequisites: Speech Arts 81A, 81B and 159, and two units from 83A-83B-183A-183B; or equivalent. Permission of the instructor.

190S. Rhetorical Theory (3) Summer

An analysis of rhetorical theory with special attention to Plato, Aristotle, Cicero, Quintilian, Cox, Wilson, Blair, Campbell, Whately, Bain, and modern authors on public speaking. The development of a theory of rhetorical criticism, culminating in a critical evaluation of contemporary oratory.

191. Organized Discussion (3) II

Consideration of the symposium, the panel, the open forum, the business session, and varieties of conference speaking. Emphasis upon organization and presentation. Attention to parliamentary procedure for informal groups. Prerequisite: Speech Arts 60 or equivalent.

192A-192B. Advanced Public Speaking (3-3) Year, I, II

Careful attention given to the preparation and delivery of longer speeches, using as models classics in the field of oratory. Prerequisite: 4.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of instructor.

Graduate Courses

200. Seminar (2) I, II

An intensive study of one phase of speech arts: (a) broadcasting techniques; (b) history of oratory; (c) articulatory problems of speech; (d) technical practice for theater and television; (e) stage direction; (f) oral interpretation; (g) scene design for stage and television. May be repeated with new materials for additional credit.

290. Bibliography (1) I, II

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis or Project (3) I, II

Guidance in the preparation of a project or thesis for the master's degree.

ZOOLOGY

IN THE DIVISION OF LIFE SCIENCES

Major

A *major in arts and sciences* is offered in *zoology* for the A.B. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Zoology 1 and Botany 1, or Biology 3 and 4; Biology 15; Chemistry 1A-1B or 2A-2B; and Physics 2A-2B and 3A-3B. Recommended: French or German, and Mathematics 7A-7B. (Nine units in physical science and life science may be counted toward general education requirements in natural science.) Upper division requirements: a minimum of 24 upper division units in the major, at least 18 of which must be in zoology and biology, including Zoology 100, 101, 106, and Biology 155; and six units of which may be in related courses selected with the approval of the departmental adviser. A minor is not required.

A *major in arts and sciences* is offered in *zoology* for the B.S. degree. Courses in the major are in addition to 45 units in general education courses. Lower division requirements: Zoology 1 and Botany 1, or Biology 3 and 4; Biology 15; Chemistry 1A-1B or 2A-2B; and Physics 2A-2B and 3A-3B. Recommended: French or German, and Mathematics 7A-7B. (Nine units in physical science and life science may be counted toward general education requirements in natural science.) Upper division requirements: 36 upper division units in zoology and biology, or approved related fields, including Zoology 100, 101, 106, and Biology 155. A minor is not required.

A *teaching major* is not offered in zoology; however, courses in zoology may be used as part of the *life science major* for the general secondary credential or as part of the *general science major* for the junior high school credential. For specific information, refer to the outlines of requirements for these credentials.

Minor

A *minor in arts and sciences* is offered in *zoology*. The minor consists of 15 to 22 units in zoology, six units of which must be in courses carrying upper division credit.

A *teaching minor* is not offered in zoology; however, it may be used as part of the *teaching minor in life science* for the general secondary credential, or as part of the *teaching minor in general science* for the special secondary, the general elementary, and the kindergarten-primary credentials. For specific information, refer to the outlines of requirements for these credentials.

Lower Division Courses

1. General Zoology (5) I, II

Introduction to animal biology for those who expect to do advanced work in this field. Three hours of lecture and six hours of laboratory per week. Not open to students with credit for Biology 3 and 4 or Zoology 1A-1B.

8A. Human Anatomy (3) I

Systems of the human body and their interrelationships. Two hours of lecture and three hours of laboratory per week. Prerequisites: an introductory course in high school or college chemistry, and an introductory course in high school or college biology or zoology. Not open to students with credit for Zoology 8.

8B. Human Physiology (3) II

Functions of the human body; emphasis on the circulatory and nervous systems. Two hours of lecture and three hours of laboratory per week. Prerequisite: Zoology 8A. Not open to students with credit for Physiology 1A or Zoology 20.

Upper Division Courses

100. Embryology (4) I, II

The development of vertebrates as illustrated by the frog, chick, and pig. Six hours of laboratory and two hours of lecture and quiz per week. Prerequisite: Zoology 1 or 1B, or Biology 3 and consent of instructor.

101. Animal Physiology (4) I

Fundamental animal functions at the cellular, tissue, organ, and organismal levels. Two hours of lecture and six hours of laboratory per week. Prerequisites: Zoology 1 or 1A-1B, or Biology 3 and 4; Biology 15; and Chemistry 1A-1B or 2A-2B.

106. Comparative Anatomy of the Vertebrates (4) I

Dissection, study and comparison of organ systems of typical vertebrates. Two hours per week of lecture and six hours of laboratory. Prerequisite: Zoology 1 or 1B, or Biology 3 and consent of instructor.

108. Histology (4) I

A study of the microscopic structures and differentiation of tissues and organs of the vertebrates, especially mammals. Two lectures and six hours of laboratory per week. Prerequisites: Either Zoology 1 or 1A-1B, or Biology 3 and 4; recommended Zoology 100.

109. Hematology (3) I, II

Microscopic and chemical examination of blood. One lecture and six hours of laboratory per week. Prerequisites: Either Biology 1, or 3 and 4, or Zoology 1 or 1A-1B.

112. Marine Invertebrates (4) I

Identification and study of behavior and life histories of invertebrates of the San Diego region. Frequent collecting trips to the beaches required. Prerequisite: Zoology 1 or 1A, or Biology 4 and consent of instructor. Two hours of lecture and six hours of laboratory or field work per week.

114. Natural History of the Vertebrates (4) II

Natural history, distribution, and classification of vertebrate animals; emphasis on local forms. Two hours of lecture and six hours of laboratory per week. Prerequisite: Zoology 1 or Biology 3 or 4.

115. Ichthyology (4) I

Evolution, interrelationships, structure, identification, habits, and ecology of fishes. Two hours of lecture and six hours of laboratory per week. Prerequisites: Zoology 1 or 1A-1B, or Biology 3 and 4.

117. Ornithology (4) II

The study and identification of birds, especially those of the Pacific Coast and the San Diego region. One hour of lecture and six hours per week of laboratory, or field excursions, and a field project. Prerequisite: Zoology 1 or 1B, or Biology 4 and consent of instructor. (Formerly Zoology 113.)

119-S. Field Zoology (4) Summer

Observational methods; collecting techniques; identification, ecology, and behavior of Southern California animals. Primarily for students not majoring in the Life Science Division. Two units of lecture and two units of laboratory. Prerequisite: a course in college biological science or permission of the instructor.

121. General Entomology (4) II

Structure, physiology, natural history, and classification of insects. Two hours of lecture and six hours of laboratory per week. Prerequisite: Zoology 1 or 1A, or Biology 4. Recommended: Biology 102.

125. Economic Entomology (4) II

Course designed for students of agriculture and horticulture. Emphasis is placed on determination and control of insects affecting plants. Quarantine measures are also studied. Two hours of lecture and six hours of laboratory per week. Prerequisite: Zoology 1 or 1A, or Biology 4 and consent of instructor.

126. Medical Entomology (3) I

The role of insects and other arthropods in transmission and causation of human diseases. Two hours of lecture and six hours of laboratory per week. Prerequisite: Zoology 1 or 1A, or Biology 4 and consent of instructor.

128. Parasitology (4) I

Study of animal parasites with special reference to those of man. Laboratory including identification of important parasites of man, and collection and preservation of local forms. Two hours of lecture and six hours of laboratory per week. Prerequisite: Zoology 1 or 1A-1B, or Biology 4 and consent of instructor.

***165. Human Heredity (2) I**

Presentation of selected principles of heredity as related primarily to human inheritance. Designed primarily for nonscience majors. Two lectures per week.

166. Honors Course (Credit to be arranged) I, II

Refer to the Honors Program.

199. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisites: 15 units in zoology with a grade of A or B; permission of instructor.

Graduate Courses

290. Bibliography (1) II

Exercises in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

298. Special Study (1-6) I, II

Individual study. Six units maximum credit. Prerequisite: permission of staff; to be arranged with department chairman and instructor.

299. Thesis (3)

Guidance in the preparation of a project or thesis for the master's degree.

DIRECTORY

1954-55

LOVE, MALCOLM A. (1952)........President
A.B., Simpson College; M.A., Ph.D., University of Iowa; LL.D., Simpson College.

ACKLEY, JOHN W. (1947)........Professor of Speech Arts
A.B., University of Redlands; M.A., Ph.D., University of Southern California.

ADAMS, EILEEN (Mrs. Bert) (1949)........Librarian I
A.B., Williamette University; B.S. in L.S., University of Denver.

ADAMS, JOHN R. (1928)........Chairman, Division of Languages and Literature; Professor of English
A.B., A.M., University of Michigan; Ph.D., University of Southern California.

ALCORN, MARVIN D. (1941)........Professor of Education
A.B., Southwestern College; A.M., Teachers College, Columbia University; Ed.D., University of Southern California.

AMSDEN, GEORGIA C. (1925)........Associate Professor of Secretarial Management
Diploma, Gregg College, Chicago; special secretarial training in various colleges.

ANDERSON, EVANS L. (1954)........Assistant Professor of Education
B.A., Gustavus Adolphus College; M.A., University of Minnesota; Ed.D., University of Denver.

ANDERSON, GRAYDON K. (1949)........Associate Professor of Economics
A.B., Williamette University; Ph.D., University of Wisconsin.

ANDERSON, PAUL V. (1954)........Assistant Professor of Music
B.M., North Texas State College; M.M., University of Wisconsin.

ANDREWS, JULIA G. (Mrs. F. S.) (1947)........Assistant Professor of Art
A.B., Northwestern University; M.A., Columbia University; two and one-half years of graduate study at Teachers College, Columbia University.

APPLE, JOE A. (1947)........Professor of Education
A.B., Southeastern State College; M.A., University of Oklahoma; Ed.D., Teachers College, Columbia University.

BACON, GUINIVERE KOTTER (Mrs. George) (1928)........Associate Professor of Education
B.S., Utah Agricultural College; M.A., Stanford University; one year of graduate study.

BAKER, CLIFFORD H., JR. (1937)........Assistant Professor of Spanish
A.B., San Diego State College; M.A., and four years of graduate study at the University of California.

BAKER, DOUGLAS L. (1954)........Assistant Professor of Education
A.B., Lynchburg College; M.S., Ed.D., University of Southern California.

BALLANTINE, FRANCIS A. (1949)........Associate Professor of Education
A.B., Michigan State Normal College; A.M., Ph.D., University of Michigan.

BARNHART, KENNETH EDWIN (1939)........Professor of Sociology
A.B., Southwestern University; B.D., Southern Methodist University; Ph.D., University of Chicago.

BECKER, CALLIE D. (Mrs. E. J.) (1946)........Librarian II
A.B., Shorter College; A.B. in L.S., Emory University.

BENJAMIN, ROBERT L. (1953)........Instructor in Speech Arts
A.B., M.S., University of California; Ph.D., University of Wisconsin.

BENTON, CARL W. (1948)........Assistant Professor of Physical Education
B.S., University of California at Los Angeles; M.S., University of Southern California.

BIGGER, WILLIAM R. (1952)........Assistant Professor of Political Science
B.A., M.A., University of Wisconsin; Ph.D., University of California at Los Angeles.

BIRCH, AILEEN J. (Mrs. C. E.) (1949)........Assistant Professor of Education
A.B., M.A., San Diego State College.

BLOCK, EDWARD A. (1946)........Professor of English
A.B., M.A., Ph.D., University of California.

BROADBENT, HARRY H. (1949)........Assistant Professor of Physical Education
A.B., University of Oklahoma; M.S., University of Pennsylvania.

BROOKS, BAYLOR (1931)........Assistant Professor of Geology
Acting Chairman, Division of Physical Science, February-June, 1954
B.A., Stanford University. Two years graduate study at University of Arizona and Stanford University.

BROOKSHIRE, MARJORIE S. (1954)........Associate Dean of Students, Activities
B.A., M.A., Ph.D., University of Texas.

BROWN, ELIZABETH McPIKE (Mrs. L. P.) (1926)........Professor of French
Ph.B., M.A., Ph.D., University of Chicago; one year graduate study at the Sorbonne, Paris, France; Certificat d'Etudes Françaises; Diplōme de l'Association Générale de Phonétique, Paris, France; Officier d'Académie.

BROWN, EUGENE P. (1947)........Associate Professor of Accounting and Business Management
B.S., Southeastern Teachers College; B.A., M.A., University of Oklahoma. Two years graduate study at University of Chicago, University of Southern California, University of Mexico, and University of Vermont.

BROWN, LESLIE PARKER (1922)........Professor of Spanish and French
B.A., Yale College; M.A., Harvard University; Ph.D., University of Southern California.

BRYDEGAARD, MARGUERITE A. (Mrs. H.) (1936)........Associate Professor of Education
A.B., San Diego State College; M.A. and graduate study at Claremont College.

BURNETT, GAIL A. (1947, except 1951-52)........Associate Professor of English
A.B., Randolph-Macon Woman's College; M.A., University of California at Los Angeles; Ph.D., University of Southern California.

CAMERON, ROY ERNEST (1929)........Professor of Economics
A.B., Ph.D., University of California.

CAMPBELL, LOIS B. (1947)........Associate Professor of Education
A.B., University of California; M.A., Teachers College, Columbia University.

CAPP, MARTIN P. (1953)........Lecturer in Engineering
B.S., M.S., University of Colorado.

CARLSON, HILDING B. (1948)........Professor of Psychology
Ph.B., M.S., Ph.D., University of Chicago.

CARLSON, THORSTEN R. (1948)........Professor of Education
B.E., St. Cloud State Teachers College; M.A., Ph.D., University of Minnesota.

CASTETTER, ROBERT K. (1954)........Assistant Professor of Accounting and Business Management
B.A., Washington and Jefferson College; L.L.B., Salmon P. Chase College of Law; L.L.M., Indiana University.

CAVE, MARY F. (1946)........Assistant Professor of Physical Education
B.S., University of North Dakota. Graduate study at Bennington College and University of California at Los Angeles.

CHADWICK, LEONARD E. (1949)........Assistant Professor of Economics
B.S. and two and one-half years graduate study at the University of California.

CHURCHILL, NEIL C. (1954)........Instructor in Accounting and Business Management
B.S., M.B.A., University of California at Los Angeles. Certified Public Accountant.

CORBETT, KATHERINE E. (1921)........Associate Professor of Education
B.Pd., Michigan State Normal College; B.S., A.M., Teachers College, Columbia University.

CRAWFORD, MAURICE L. (1954)........Assistant Professor of Business Education, Secretarial and Office Management
B.S., M.S., University of Utah; graduate study at University of California at Los Angeles.

CRAWFORD, RONALD W. (1953)........Instructor in Zoology
A.B., San Diego State College; Ph.D., Cornell University.

CROUCH, JAMES ENSIGN (1932)........Professor of Zoology
B.S., M.S., Cornell University; Ph.D., University of Southern California.

CUMMINS, CARL C. (1953)........Assistant Professor of Industrial Arts
A.B., Santa Barbara College, University of California; M.S., University of Southern California.

CUNKLE, ELIZABETH C. (Mrs. L.) (1948)........Librarian II
A.B., University of California; B.S. in L.S., Columbia University. Graduate study, University of California.

CUNNINGHAM, CORNELIUS C. (1947)........Professor of Speech Arts
A.B., Beloit College; M.A., Northwestern University; Ph.D., University of Iowa.

DeBRECHT, EUGENE F. (1949)........Assistant Professor of Marketing
A.B., San Francisco State College; M.A., Stanford University.

DEPUTY, ERBY CHESTER (1931)........Professor of Education
A.B., University of Denver; A.M., Ph.D., Columbia University.

DIRKS, JOHN H. (1947)........Assistant Professor of Art
A.B., San Diego State College. Graduate study at University of Southern California.

DORRIS, HELEN L. (1952)........Assistant Professor of Home Economics
B.S., Southern Illinois University; M.S., University of Illinois.

* EAGLE, JOHN E. (1946)........Professor of Mathematics
B.S., Montana State College; M.A., Ed.D., Stanford University.

EARNEST, SUE W. (Mrs. L. E.) (1947)........Associate Professor of Speech Arts
A.B., San Diego State College; M.A., Ph.D., University of Southern California.

EMERSON, ARTHUR T. (1952)........Assistant Professor of Mathematics
B.S., U. S. Naval Academy; one year graduate study at Naval War College.

EVENSON, PATTEE E. (1949)........Associate Professor of Music
B.S., University of Minnesota; M.M., University of Michigan; specialized training at Universities of Minnesota, Michigan, Southern California, and Eastman School of Music; private instruction in Paris, London and the United States.

FISHER, J. SHERRICK (1953)........Assistant Professor of Education
B.S., Bethany College; M.A., Teachers College, Columbia University; Ph.D., University of Pittsburgh.

FLYE, RICHARD C. (1950)........Assistant Professor of Music
B.A., University of Virginia; M.A., and Professional Diploma, Columbia University.

FORD, WALTER B. (1953)........Lecturer in Industrial Arts
B.E., Santa Barbara State College; graduate study at Claremont Graduate School.

FOX, DOROTHEA B. (1951)........Librarian I
B.A., San Diego State College; B.S. in L.S., M.A., University of Southern California; graduate study at University of New Mexico.

FRAME, ROBERT A. (1954)........Assistant Professor of Art
B.A., Pomona College; M.F.A., Claremont Graduate School.

FRIEDRICH, KURT (1949)........Associate Professor of Education
A.B., Columbia College; M.A., Columbia University; Ed.D., Columbia Teachers College.

FULKERSON, E. GLEN (1954)........Assistant Professor of Education
B.E., Southern Illinois University; M.A., Ed.D., University of California at Los Angeles.

GALLUP, AVERY H. (1952)........Assistant Professor of Zoology
A.B., San Diego State College; M.A., Claremont Graduate School; Ph.D., University of Michigan.

GELDREICH, EDWARD W. (1947)........Associate Professor of Psychology
A.B., M.A., University of Cincinnati; Ph.D., University of Chicago.

GENERALES, MINOS D. (1949)........Associate Professor of Political Science
Degree in Law and Political Science, including six years of graduate study at the University of Athens, University of Paris Law School, and Institute of International Studies.

GERMANN, LULA (1926)........Supervising Librarian, Public Services
B.S., State Teachers College, Hays, Kansas.

GIBSON, ERNEST DANA (1947)........Professor of Business Education,
Secretarial and Office Management
B.S., University of Minneosta; M.A., Colorado State College of Education; Ed.D., New York University.

GIFFORD, ADAM (1954)........Instructor in Economics
B.A., Portland University; M.A., Stanford University; advanced study at University of Washington.

GJERDE, CLAYTON M. (1948)........Associate Professor of Education
A.B., Augsburg College; M.A., Ph.D., University of Minnesota.

GRISIER, DONALD W. (1951)........Assistant Professor of Education
B.S., Bowling Green State University; M.A., Ed.D., Teachers College, Columbia University.

GULICK, SIDNEY L., JR. (1945)........Professor of English
B.A., M.A., Oberlin College; Ph.D., Yale University.

HAMMACK, ISABELLA STEWART (1936)........Associate Professor of Education
A.B., M.A., and one year graduate study at the University of California.

HARRINGTON, AWONA W. (1949)........Librarian I
A.B. and one year graduate study at San Diego State College; M.S. in L.S., University of Southern California.

HARRINGTON, NEIL J. (1948)........Assistant Professor of Chemistry
B.S., Monmouth College; one year of graduate study at DePaul University and Northwestern University.

HARRIS, VINCENT C. (1950)........Associate Professor of Mathematics
B.A., M.A., Ph.D., Northwestern University.

HARRISON, ROBERT C. (1953)........Assistant Professor of Psychology
B.S., M.S., University of Washington.

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* On leave Semester II.

HARTIGAN, SELWYN C. (1946)........Business Manager
A.B., San Diego State College.

HARVEY, A. R. (1949)........Associate Professor of Mathematics
B.S., Bates College; A.M., Ph.D., Harvard University.

HARVEY, DOROTHY R. (Mrs. F. A.) (1924)........Assistant Professor of Botany
A.B., San Diego State College; M.A., University of Southern California. One year graduate study at University of Southern California and University of Chicago.

HARWOOD, ROBERT DANIEL (1928)........Chairman, Division of Life Sciences; Professor of Zoology
A.B., Pomona College; Ph.D., Cornell University.

HASKELL, HARRIET (1940, except 1943-45)........Associate Professor of English
A.B., Mills College; M.A., Bryn Mawr College; Ph.D., University of Wisconsin.

HAYNES, GERALDINE K. (Mrs. L.) (1931)........Librarian II
A.B., Indiana Central College; B.S. in L.S., University of Illinois.

HENDERSON, DAVID A. (1954)........Instructor in Geography
B.S., M.A., University of Colorado; advanced study at University of California at Los Angeles.

HODGE, GLENN L. (1953)........Assistant Professor of Accounting and Business Management
B.S., Kansas State Teachers College; M.S., University of Denver; Ph.D., Louisiana State University.

HOLMES, DARRELL C. (1952)........Assistant Professor of Education and Psychology
B.A., M.A., Ph.D., Ohio State University.

HOUSEMAN, RICHARD A. (1948)........Professor of Education
B.S., Central Michigan College of Education; M.A., Ed.D., Teachers College, Columbia University.

HOUSER, LOWELL (1938)........Associate Professor of Art
Diploma, Chicago Art Institute. Five years' special study in Mexico, Yucatan, Haiti, and New York City.

HUNTER, JAMES J., JR. (1946)........Executive Dean; Professor of Education
A.B., Cornell University; M.S., Ph.D., Syracuse University.

ISENSEE, ROBERT W. (1948)........Associate Professor of Chemistry
A.B., Reed College; M.A., Ph.D., Oregon State College.

* JACKSON, EVERETT GEE (1930)........Professor of Art
A.B., San Diego State College; M.A., University of Southern California. Three years special study in Mexico.

JACOBSEN, HELEN M. (1946)........Librarian II
A.B., San Diego State College; B.S. in L.S., University of California.

JANSSEN, HENRY L. (1953)........Assistant Professor of Political Science
B.A., M.A., University of Oklahoma; Ph.D., University of California.

JOHNSON, FRANK LOUIS (1939)........Professor of English
A.B., M.A., University of Minnesota; Ph.D., University of Wisconsin.

JONES, KENNETH K., JR. (1948)........Associate Professor of Speech Arts
B.S., Northwestern University; M.A., Stanford University.

JOSEPH, LIONEL (1947)........Professor of Chemistry
B.S., St. Louis University; M.S., Ph.D., Washington University.

JOY, NED V. (1953)........Assistant Professor of Political Science
A.B., Ph.D., University of California.

JULIAN, JAMES L. (1951)........Publications and Public Relations Officer; Lecturer in Journalism
B.S., B.A., University of Houston; M.A., University of Texas.

KALBFELL, DAVID C. (1948)........Associate Professor of Physics
A.B., University of California at Los Angeles; M.A., Ph.D., University of California. Registered Electrical Engineer.

KAPLAN, OSCAR J. (1946)........Professor of Psychology
B.A., M.A., University of California at Los Angeles; Ph.D., University of California.

KARLSEN, BJORN (1954)........Assistant Professor of Education
B.A., State Teachers College, Oslo, Norway; B.S., M.A., University of Nebraska; Ph.D., University of Minnesota.

KASCH, FREDERICK W. (1948)........Associate Professor of Physical Education
B.S., M.S., University of Illinois; graduate study at New York University and University of Illinois.

KEENEY, JOSEPH SUMNER (1933)........Professor of English
A.B., Yale University; M.A., Ph.D., University of California.

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* On leave Semester I.

KEMP, BENNY B. (1954)..........Assistant Professor of Music
B.M., Eastman School of Music; M.M., University of Indiana.

KENNEDY, CHESTER B. (1937)..........Professor of English
A.B., Chico State College; M.A., Ph.D., Stanford University.

KIDWELL, WILLIAM M. (1949)..........Placement Officer; Associate Professor of Psychology
B.A., M.S., University of Oregon; Ed.D., Stanford University.

KINDER, JAMES S. (1953)..........Coordinator of Audio-Visual Services; Assistant Professor of Education
B.S., Southeast Missouri College; M.A., Ph.D., Teachers College, Columbia University.

KIRBY, BERNARD C. (1954)..........Assistant Professor of Sociology
A.B., Denison University; M.A., Ph.D., University of Washington.

KITZINGER, ANGELA M. (1945)..........Associate Professor of Health Education
A.B., Barnard College, Columbia; M.A., Teachers College, Columbia University.

KLAPP, ORRIN E. (1948)..........Associate Professor of Sociology
M.A., Ph.D., University of Chicago.

KLEMER, ELIZABETH J. (1953)..........Assistant Professor of Education
B.E., National College of Education; M.A., George Peabody College; graduate study at Teachers College, Columbia University, and Stanford University.

KOESTER, GEORGE A. (1950)..........Associate Professor of Education
B.S., Midland College; M.A., University of Colorado; Ph.D., University of Minnesota.

LAMDEN, CHARLES W. (1946)..........Chairman, Division of Business; Professor of Accounting and Business Management
A.B., M.A., University of California at Los Angeles; Ph.D., University of California. Certified Public Accountant.

LANDIS, VINCENT J. (1954)..........Instructor in Chemistry
B.S., Washington State College; advanced study at University of Minnesota.

LAURITSEN, WILLIAM H. (1947)..........Professor of Health Education
A.B., M.A., University of Nebraska; Ph.D., Ohio State University.

LEBARRON, EVANGELINE O. (Mrs. H. E.) (1946, except 1948-49)
Assistant Professor of Secretarial Management
B.A., B.S., University of Iowa; B.A., Sioux Falls College; one and one-half years graduate study at Claremont Colleges, Universities of Southern California, Minnesota and Hawaii.

LEIFFER, DONALD B. (1948)..........Professor of Political Science
A.B., University of California at Los Angeles; M.A., Ph.D., Harvard University.

LEMME, MAURICE M. (1948)..........Professor of Mathematics
A.B., Oakland College; M.A., Indiana University; Ph.D., Purdue University.

LEONARD, CHARLES B. (1921)..........Professor of History
A.B., M.A., Ph.D., University of California.

LIENERT, CHARLES (1954)..........Assistant Professor of Education
B.E., Southern Illinois University; M.S., University of Illinois; Ed.D., Colorado State College of Education.

LINLEY, JAMES M. (1945)..........Associate Professor of Education
Ph.B., University of Chicago; M.S., Ph.D., University of Southern California.

LOCKMAN, EVELYN (1948)..........Associate Professor of Physical Education
B.A., Vanderbilt University; M.A., George Peabody College; graduate study at New York University, and University of Wisconsin; three years special study in dance.

LODGE, CHESTER R. (1954)..........Assistant Professor of Engineering
B.S., M.S., Ph.D., State University of Iowa.

LUCE, LAWRENCE W. (1949)..........Assistant Professor of Industrial Arts
B.S., Illinois Wesleyan University; M.S., Iowa State College.

MADDEN, RICHARD (1939)..........Chairman of Graduate Studies; Professor of Education
A.B., Nebraska (Peru) State Teachers College; M.A., Ph.D., Columbia University.

MALCOLM, DAVID D. (1953)..........Assistant Professor of Education
A.B., Harvard College; Ed.M., Boston University; Ph.D., Northwestern University.

MARCHAND, ERNEST L. (1946)..........Professor of English
A.B., M.A., University of Washington; Ph.D., University of Wisconsin.

MARKOWITZ, ABRAHAM (1952)..........Assistant Professor of Bacteriology
B.A., New York University; M.S., Ph.D., University of Southern California.

McBLAIR, WILLIAM (1948)..........Assistant Professor of Zoology
A.B., San Diego State College; two years of graduate work at the University of California.

McCARTHA, ALICE P. (Mrs. C.) (1953)..........Assistant Professor of Education
Ed.B., Illinois State Normal University; M.A., University of Illinois; Ed.D., University of Florida.

McCLINTIC, JOSEPH O. (1946)..........Professor of Economics
A.B., Central College; A.M., University of Missouri; Ph.D., University of Wisconsin.

McCOLLOM, IVAN N. (1946)..........Professor of Psychology
A.B., Central Washington College of Education; B.S., M.S., University of Oregon; Ed.D., Colorado State College of Education.

McLONEY, WIRT L. (1949)..........Assistant Professor of Industrial Arts
A.B., Western State College; M.A., Colorado State College of Education.

MENDENHALL, MARY (1939)..........Professor of Philosophy
B.A., University of Colorado; M.A., University of Southern California; Ph.D., Yale University.

MERRILL, JOHN E. (1946)..........Assistant Professor of History
A.B., Stanford University; A.M., Harvard University; Ph.D., Stanford University.

MERZBACHER, CLAUDE FELL (1947)..........Assistant Professor of Physical Science
B.S., University of Pennsylvania; M.A., Claremont Graduate School. Certificat d'Etudes Francaises. Licensed Professional Chemical Engineer.

MESSIER, LEONARD N. (1946)..........Associate Professor of French
A.B., San Diego State College; M.A., Ph.D., University of California.

MILLER, MARTHA H. (Mrs. A. R.) (1952)..........Lecturer in Education
A.B., San Diego State College.

MILNE, DAVID S. (1946)..........Professor of Sociology
A.B., University of California at Los Angeles; M.A., University of Southern California; Ph.D., University of Chicago.

MOE, CHESNEY R. (1931)..........Professor of Physics
A.B., M.A., Stanford University; Ph.D., University of Southern California. Registered Electrical Engineer.

MONTEVERDE, JOHN P. (1954)..........Instructor in English
B.A., M.A., and advanced study at University of California at Los Angeles.

MORGAN, CHARLES (1949)..........Assistant Professor of Engineering
M.E., Stevens Institute of Technology; M.S., University of California. Registered Professional Mechanical Engineer.

MYERS, MABEL A. (1946)..........Professor of Bacteriology
A.B., M.A., Pomona College; Ph.D., Cornell University.

NARDELLI, ROBERT R. (1953)..........Assistant Professor of Education
B.A., M.A., Arizona State College; Ph.D., University of California.

NASATIR, ABRAHAM PHINEAS (1928)..........Professor of History
A.B., M.A., Ph.D., University of California.

NICHOLS, AMBROSE R., JR. (1939)..........Professor of Chemistry
B.S., University of California; Ph.D., University of Wisconsin.

NIEBAUER, RUBY R. (1949)..........Assistant Professor of Education
B.S., M.S., University of Wisconsin.

NORLAND, CALVERT E. (1947)..........Assistant Professor of Zoology
A.B., Pomona College; M.S., University of California. Graduate study at Claremont Colleges.

NUTTALL, EDMOND C. (1953)..........Activities Adviser; Instructor in Speech Arts
A.B., San Diego State College; M.A., University of Southern California.

O'BYRNE, ERNEST B. (1954)..........Dean of Educational Services and Summer Session
A.B., A.M., Colorado State College of Education; Ph.D., Stanford University.

ODMARK, VERNIE E. (1952)..........Assistant Professor of Accounting
B.S., St. Cloud State Teachers College; M.A., University of Minnesota; Ph.D., University of Missouri.

OLSON, ANDREW C., JR. (1946)..........Assistant Professor of Zoology
A.B., San Diego State College; M.S., University of Idaho; Ph.D., Oregon State College.

OSBORN, CLARENCE G. (1928-29 and 1937)..........Professor of History and Political Science
A.B., A.M., Ph.D., Stanford University.

PARKER, MARION L. (1951)..........Registrar
A.B., San Diego State College; M.A., University of Southern California.

PEIFFER, HERBERT C., JR. (1937)..........Dean of Students;
Professor of Psychology and Guidance
A.B., University of California at Los Angeles; M.A., Ph.D., Stanford University.

PEREZ, ROSE MARIE (1948)..........Librarian II
A.B., San Diego State College; B.S. in L.S., University of Southern California; M.A., University of Chicago; graduate study at University of Madrid.

PFAFF, PAUL LEWIS (1931)..........Professor of Speech Arts
A.B., Stanford University; M.A., Ph.D., University of Southern California.

PHILLIPS, GEORGE L. (1947)——Associate Professor of English
A.B., Dartmouth College; M.A., Harvard University; Ph.D., Boston University.

PHILLIPS, KENNETH (1950)——Associate Professor of Industrial Arts
B.S., State College for Teachers (Buffalo); M.A., Ph.D., Ohio State University.

PHILLIPS, WALTER THOMAS (1927)——Professor of Spanish
A.B., University of Washington; M.A., Stanford University; Ph.D., University of Southern California.

PIERSON, ALBERT C. (1954)——Assistant Professor of Accounting and Business Management
B.S., University of Illinois; M.B.S., Harvard University; advanced study at Columbia University.

PLACE, ROBERT I. (1954)——Assistant Professor of Business Education, Secretarial and Office Management
B.E., Wisconsin State College; A.M., Northwestern University; advanced study at University of Southern California.

* POST, LAUREN CHESTER (1937)——Professor of Geography
A.B., M.A., Ph.D., University of California.

POVENMIRE, E. KINGSLEY (1946)——Associate Professor of Speech Arts
B.S., Ohio State University; M.F.A., Yale University.

POWELL, DON W. (1953)——Assistant Professor of Speech Arts
B.S., Kirksville State Teachers College; M.F.A., State University of Iowa.

PRESTON, DUDLEY A. (1948)——Associate Professor of Botany
B.S., Washington State College; M.S., Ph.D., University of Minnesota.

PROUTY, HELEN L. (1950)——Assistant Professor of Education
B.S., University of Nebraska; M.A., Ph.D., University of California.

RADER, Daniel L. (1954)——Instructor in History
A.B., M.A., Ph.D., University of California.

RAGEN, KATHERINE M. (1947)——Professor of History
A.B., Penn College; M.A., Bryn Mawr College; Ph.D., University of Wisconsin.

RICHARDSON, ROBERT W. (1939, except 1946-48)——Chairman, Division of Social Sciences; Professor of Geography
A.B., Ph.D., University of California.

RIDOUT, LIONEL U. (1946, except 1949-50)——Assistant Professor of History
A.B., San Diego State College; M.A., University of California; Ph.D., University of Southern California.

RIGGS, LESTER G. (1950, except 1951-52)——Assistant Professor of Mathematics
B.S., University of Illinois; M.S., Syracuse University; Ph.D., Northwestern University.

ROBERTS, ELLIS E. (1949)——Assistant Professor of Geology
B.S., Michigan College of Mining and Technology; M.S., California Institute of Technology; Ph.D., Stanford University.

ROBERTSON, FRANK O. (1953)——Director of Health Services
B.S., M.S., B.S., (Medicine), University of North Dakota; M.D., University of Oregon Medical School.

ROBINSON, DUDLEY HUGH (1928)——Chairman, Division of Physical Science; Professor of Chemistry
B.S., Louisiana State University; M.S., State University of Iowa; Ph.D., University of Southern California. Registered Chemical Engineer.

ROGERS, SPENCER LEE (1930)——Professor of Anthropology
A.B., San Diego State College; M.A., Claremont Colleges; Ph.D., University of Southern California.

ROHFLEISCH, KRAMER J. (1947)——Professor of History
A.B., M.A., Ph.D., University of California.

ROST, NORMAN (1951)——Assistant Professor of Music
B.M., M.M., University of Michigan.

ROWE, ROBERT D. (1946)——Professor of Chemistry
A.B., Engineer in Engineering Chemistry, Ph.D., Stanford University.

RUJA, HARRY (1947)——Associate Professor of Philosophy and Psychology
A.B., University of California at Los Angeles; M.A., University of Chicago; M.A., San Diego State College; Ph.D., Princeton University.

RUMBAUGH, DUANE M. (1954)——Instructor in Psychology
A.B., University of Dubuque; M.A., Kent State University; Ph.D., University of Colorado.

RUOCCO, ILSE H. (Mrs. L.) (1934)——Associate Professor of Art
B.E., University of California at Los Angeles; M.A., Columbia University.

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* On leave Semester II.

* RYAN, FREDERICK L. (1946)............Professor of Economics
B.S., Tufts College; Ph.D., University of California.

SABALA, VIRGINIA H. (1954)............Librarian I
A.B., University of Arizona; Teacher-Librarian Certificate.

SAMPLES, HOWELL GORDON, JR. (1950)............Librarian I
A.B., University of Georgia; B.S. in L.S., George Peabody College for Teachers.

SCHALLES, FRANCES IRENE (1950)............Librarian I
A.B., San Diego State College. One year graduate study.

SCHRUPP, MANFRED H. (1948)............Chairman, Division of Education; Associate Professor of Education
B.S., M.Ed., Ph.D., University of Minnesota.

SCHUNERT, JIM R. (1948)............Associate Professor of Education
B.S., M.A., Ph.D., University of Minnesota.

SCHUTTE, WILLIAM H. (1947)............Associate Professor of Physical Education
B.S., University of Idaho; M.S., University of Southern California.

SCHWOB, MARION L. (Mrs. W. E.) (1934)............Associate Professor of Physical Education
B.A., State University of Iowa; M.S., University of Southern California.

SCOTT, FRANK L. (1947)............Associate Professor of Physical Education
A.B., Grinnell College; M.A., University of Michigan; additional study at the University of Michigan.

SELLMAN, HUNTON D. (1946)............Professor of Speech Arts
B.S., Purdue University; M.S., University of Arizona. Three and one-half years graduate study at University of California, University of North Carolina and Yale University.

SHANNON, FLORENCE S. (Mrs. E. L.) (1933)............Assistant Professor of Physical Education
A.B., University of California; M.S., University of Southern California.

SHAW, ALMA MORRIS (1954)............Librarian I
B.S., University of Alabama; School Librarian's Certificate.

SHIELDS, ALLAN E. (1949)............Associate Professor of Philosophy
A.B., University of California; M.A., Ph.D., University of Southern California.

SHOUSE, CLAUDE F. (1946)............Assistant Professor of English
A.B., Georgetown College; M.A., University of Kentucky; Ph.D., University of Southern California.

** SILVERNAIL, CHESTER J. (1949)............Assistant Professor of Astronomy
A.B., San Diego State College; M.A., Claremont Graduate School.

SKOLIL, LESTER L. (1951)............Associate Professor of Physics
A.B., Doane College; M.A., University of Nebraska; Ph.D., University of California.

SMITH, CHARLES ROBERTS (1933)............Assistant Professor of Physical Education
A.B., San Diego State College; M.S., University of Southern California.

SMITH, CLIFFORD EDWARD (1937)............Professor of Astronomy
A.B., Carleton College; M.A., Swarthmore College; Ph.D., University of California.

SMITH, DEANE FRANKLIN (1939)............Associate Professor of Music
B.M., M.M., Northwestern University.

SMITH, LOUIS E., JR. (1946)............Professor of Physics
A.B., San Diego State College; Ph.D., University of Washington.

SMITH, NEWTON B. (1954)............Instructor in Mathematics
B.A., Reed College; M.A., Oregon State College; Ph.D., Iowa State College.

SNIDER, MERVIN S. (1953)............Assistant Professor of Music
B.A., Pomona College; M.A., Eastman School of Music; graduate study at Northwestern University and Claremont Graduate School.

SNODGRASS, HERSCHEL R. (1954)............Assistant Professor of Physics
B.A., M.S., University of New Mexico; Ph.D., University of California.

SORENSON, GEORGE N. (1946)............Chairman, Division of Fine Arts; Associate Professor of Art
A.B., San Diego State College; M.A., University of Southern California; graduate study at University of California and University of Minnesota.

SPANGLER, JOHN A. (1946)............Professor of Chemistry
A.B., Ph.D., West Virginia University.

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* On leave Semester II.

** On leave.

SPORTSMAN, CHARLES C. (1947)........Associate Professor of Physical Education
B.S., North Texas State College; M.S., and one year additional study at the University of Southern California.

SPRINGSTON, CHRISTINE (1930)........Associate Professor of Music
B.A., B.M., University of Redlands; M.A., University of Washington, Diplomée d'execution, Conservatoire Americain, Fontainebleau, France.

STEWART, PAUL E. (1953)........Assistant Professor of Physical Science
A.B., College of Wooster; Ph.D., Stanford University.

STONE, HAMILTON L. (1947)........Assistant Professor of Engineering
B.S., U. S. Naval Academy. Two and one-half years of graduate study. Registered Mechanical Engineer.

STONE, JOHN PAUL (1930)........Head Librarian; Professor of Library Science
B.S., Northwest Missouri State Teachers College; B.S., M.S., University of Illinois; Ph.D., University of Chicago.

STONER, WILLIAM J. (1954)........Instructor in Mathematics
A.B., University of Kansas; M.S., Iowa State College.

STORM, ALVENA (Mrs. Eugene) (1926)........Associate Professor of Geography
A.B., M.A., University of California.

STOUGH, MORROW F. (1950)........Principal, Campus Laboratory School; Associate Professor of Education
A.B., Wittenberg College; M.A., University of Pennsylvania; Ph.D., University of California.

STRAUB, LURA LYNN (1948)........Assistant Professor of Secretarial Management
A.B., Jamestown College; M.C.S., Indiana University; graduate study at University of Wyoming and University of Denver.

SWIGGETT, JEAN D. (1946)........Professor of Art
A.B., San Diego State College; M.F.A., University of Southern California; graduate study at Claremont Colleges.

TALBOY, RUTH A. (1947)........Assistant Professor of Home Economics
B.S., Iowa State College; M.A., Stanford University; graduate study at Universities of Minnesota, Iowa, and California.

TAYLOR, JAMES W. (1950)........Assistant Professor of Geography
A.B., Northwestern State College; M.A., Louisiana State University.

TAYLOR, KENNETH M. (1949)........Associate Professor of Zoology
A.B., M.A., Ph.D., University of California.

TAYLOR, MERREL A. (1946)........Assistant Professor of Zoology
A.B., Indiana University; B.S., M.S., University of Michigan.

TERHUNE, JOHN A. (1947)........Assistant Professor of Physics
B.S., U. S. Naval Academy; M.S., Harvard University.

* TERRY, WILLIAM L. (1946)........Chairman, Division of Health Education, Recreation and Physical Education; Director of Athletics; Lecturer in Physical Education
A.B., Western Kentucky Teachers College; M.S., Indiana University; two years of additional study at University of Kentucky, University of Illinois, and Columbia University.

THEOBOLD, JOHN R. (1946)........Professor of English
B.A., St. Catherine's College, Oxford University; M.A., Mansfield College, Oxford University; Ph.D., University of Iowa.

THOMAS, VIRGINIA (Mrs. A. F.) (1954)........Librarian I
B.A. and graduate study, North Texas State College.

TIDWELL, JAMES N. (1947)........Professor of English
A.B., Simmons University; M.A., University of Oklahoma; Ph.D., Ohio State University.

TOLLEFSEN, DOROTHY J. (1946)........Assistant Professor of Physical Education
A.B., M.A., University of California.

TOOL, MARCUS R. (1953)........Assistant Professor of Economics
B.S., M.A., University of Denver; Ph.D., University of Colorado.

TORBERT, FRANCES B. (Mrs. H.) (1937)........Associate Professor of Marketing
A.B., Stanford University; M.A., University of Southern California; one year graduate study at Stanford University.

TOZER, LOWELL (1954)........Instructor in English
A.B., University of Chicago; M.A., De Paul University; Ph.D., University of Minnesota.

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* On leave.

TRAIL, MABEL COY (1935)————Professor of English
A.B., Parsons College; M.A., State University of Iowa; Ph.D., University of Southern California.

TREAT, WOLCOTT C. (1950)————Associate Professor of Psychology
A.B., Harvard College; A.M., Harvard University; Ph.D., Stanford University.

TUCKER, GORDON H. (1945)————Professor of Zoology
B.S., M.S., University of South Carolina; Ph.D., University of North Carolina.

* TURNER, MERLE B. (1950)————Assistant Professor of Psychology
A.B., Willamette University; M.A., Stanford University; Ph.D., University of Colorado.

VANCE, ROBERT W. (1954)————Physician and Surgeon
B.S., University of South Dakota; M.D., Northwestern University.

VOEKS, VIRGINIA W. (1949)————Assistant Professor of Psychology
B.S., M.S., University of Washington; Ph.D., Yale University.

WALBA, HAROLD (1949)————Assistant Professor of Chemistry
B.S., Massachusetts State College; Ph.D., University of California.

WALKER, DONALD E. (1949)————Associate Dean of Students, Counseling
A.B., M.Th., University of Southern California; Ph.D., Stanford University.

WALLING, CURTIS R. (1931)————Professor of Engineering
A.B., E.E., Stanford University; one and one-half years of graduate study at Stanford University and the University of Southern California. Registered Electrical Engineer.

WATENPAUGH, FRANK M. (1935)————Associate Professor of Accounting
A.B., Pomona College; M.A., University of Southern California. Two years graduate study at University of Southern California and University of Oregon. Public Accountant.

WATSON, DONALD R. (1939)————Dean of Instruction; Professor of Physical Science
A.B., B.S., A.M., Ed.D., University of Southern California.

WEBB, CHARLES R., JR. (1949)————Associate Professor of History
A.B., M.A., University of California; M.A., Ph.D., Harvard University.

WENDLING, AUBREY (1954)————Assistant Professor of Sociology
A.B., San Francisco State College; M.A., Ph.D., University of Washington.

* WEST, EDNA A. (1948)————Assistant Professor of Secretarial Management
B.A., Santa Barbara State College; M.A., Claremont Colleges; graduate study at Claremont Colleges, Columbia University and Oregon State College.

WHITE, ALFRED E. (1946)————Admissions Officer; Associate Professor of Guidance
A.B., M.A., University of California; Ed.D., Stanford University.

WILCOX, ROBERT F. (1950)————Coordinator of Public Administration;
Associate Professor of Political Science
A.B., M.A., Stanford University; M.A., Columbia University; Ph.D., Stanford University

WILSON, ALLAN N. (1954)————Instructor in Physics
B.S., Webb Institute of Naval Architecture; advanced study at University of California.

WIMER, ARTHUR C. (1950)————Lecturer in Journalism
B.Lit., Columbia University; M.A., University of Iowa.

WOLF, ERNEST M. (1947)————Associate Professor of German and Romance Languages
Study at the Universities of Berlin, Paris, Muenster, Cambridge and Bonn. Ph.D., University of Bonn.

WRIGHT, JOHN S. (1952)————Assistant Professor of Marketing
Ph.B., University of North Dakota; M.B.A., University of Southern California; Ph.D., Ohio State University.

WRIGHT, WILLIAM H. (1921)————Professor of Accounting and Business Management
B.S., M.A., University of California; Ph.D., University of Southern California. Public Accountant.

ZIEGENFUSS, GEORGE (1948)————Acting Chairman, Division of Health Education, Physical Education and Recreation; Director of Athletics; Associate Professor of Physical Education
B.A., University of Washington; M.A., Ed.D., Teachers College, Columbia University.

ZIMMERMAN, WAYNE S. (1953)————Test Officer; Assistant Professor of Psychology
B.A., Santa Barbara State College; Ph.D., University of Southern California.

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* On leave.

LECTURERS

ATKINSON, BEATRICE (1954)...Lecturer in Nursing
San Diego County Hospital School of Nursing.

BACK, GILBERT (1950)...Lecturer in Music
Professional musician.

BAKER, ROSS A. (1952)...Lecturer in Chemistry
Ph.D., University of Wisconsin.

BURDICK, HUNTINGTON (1951)...Lecturer in Music
Professional musician.

CLARK, EDWARD T. (1954)...Lecturer in Education
San Diego County Schools.

CLARK, HELEN S. (1952)...Lecturer in Mathematics
B.A., Macalester College.

COMIN, NORITA N. (1949)...Lecturer in Home Economics
B.S., University of Minnesota.

DE JULIEN, LORENZ F. (1949)...Lecturer in Marketing
Self-employed

GANONG, CONSTANCE L. (1954)...Lecturer in Nursing
San Diego County Hospital School of Nursing.

GOODWIN, JOHN H. (1947)...Lecturer in Insurance
Insurance broker.

HARGUS, WILLIAM D. (1954)...Lecturer in Engineering
B.S., and graduate study at University of California.

HARTLEY, JAMES M. (1954)...Lecturer in Art
Linda Vista Department Store.

HELLYER, C. DAVID (1954)...Lecturer in English
The San Diego Union.

HOENECKE, PAULA M. (1954)...Lecturer in Nursing
San Diego County Hospital School of Nursing.

HUFF, GEORGE D., M.D. (1939)...Lecturer in Health and Hygiene
Practicing physician.

KOOP, KATHERINE C. (1954)...Lecturer in Education
A.B., San Francisco State College.

MARKS, R. DALE (1954)...Lecturer in Business Management
Consolidated Vultee Aircraft Corporation.

McLEOD, DAN D. (1954)...Lecturer in English
B.A., Pomona College.

MOORE, EDWENA B. (1954)...Lecturer in Education
M.A., Claremont Graduate School.

MULLENIX, CARLOS W. (1950)...Lecturer in Music
Professional musician.

NYE, NEVA E. (1953)...Lecturer in Nursing
San Diego County Hospital School of Nursing.

OLSEN, ALBERT W. (1954)...Lecturer in Physical Education
A.B., San Diego State College.

PLATNER, JAY GOULD (1954)...Lecturer in English
A.B., San Diego State College.

RATTY, FRANK J. (1954)...Lecturer in Zoology
Ph.D., University of Utah.

RUSK, JAMES H., JR. (1954)...Lecturer in Physics
M.S., Scripps Institution of Oceanography, University of California.

SMITH, LEWIS F. (1954)...Lecturer in Education
Grossmont Union High School.

SYLVESTER, HELEN K....Lecturer in Education
Principal, Euclid School. A.B., San Diego State College.

TIFFANY, BURTON C. (1954)...Lecturer in Education
Chula Vista City Schools.

TROGE, RALPH F....Lecturer in Education
Principal, Woodrow Wilson Junior High School. Ed.D., University of Oregon.

VAN CLEAVE, MAURICE (1954)...Lecturer in Accounting
M.B.A., University of California at Los Angeles.

ASSISTANT INSTRUCTORS

FOSTER, FREDERICK T. (1954) A.B., San Diego State College.	Assistant in Mathematics
HAMBELTON, ROBERT G. (1954) A.B., Santa Barbara College.	Assistant in Speech Arts
STOWERS, JOSEPH H., JR. (1953) A.B., San Diego State College.	Assistant in Zoology

DIVISION OF AIR SCIENCE

MONACO, JOHN, JR., LT. COL. (1952)	Chairman, Division of Air Science; Commanding Officer and Professor of Air Science
TWAY, DUANE C., MAJOR (1954)	Assistant Professor of Air Science
SEELY, FRANK K., MAJOR (1952)	Assistant Professor of Air Science
LEWIS, WILLIAM M., CAPTAIN (1951)	Assistant Professor of Air Science
DUPONT, FORREST R., 1ST LT. (1951)	Assistant Professor of Air Science
BLACKSTOCK, WILLIAM, JR., M/SGT. (1951)	NCOIC Supply
FREDERICK, HERBERT L., T/SGT. (1954)	Cadet Records
JOHNSTON, VIRGIL A., M/SGT. (1951)	Senior Clerk
KLEMETSON, HAROLD A., M/SGT. (1952)	Sgt. Major
SHORE, EUGENE C., M/SGT. (1952)	Cadet Records

RETIRED FACULTY

(Date following name indicates date of retirement)

HARDY, EDWARD L. (1935)	President Emeritus
HEPNER, WALTER R. (1952)	President Emeritus
BAIRD, OSCAR (1951)	Professor of Physics
BLAKE, DEAN (1952)	Lecturer in Meteorology
DICKHAUT, FLORENCE SMITH (1952)	Professor of English
HAMMACK, EDITH CHASTAIN (1950)	Associate Professor of Education
JOHNSON, MYRTLE (1946)	Professor of Biology
LEIB, JULIUS (1954)	Associate Professor of Music
MOLITOR, VINNIE CLARK (1938)	Associate Professor of Geography
PERRY, FAY V. (1953)	Professor of Sociology
PETERSON, CHARLES E. (1953)	Dean of Men; Professor of Physical Education
SKILLING, W. T. (1936)	Professor of Astronomy
SMITH, LEILA DEBORAH (1948)	Professor of Music
STOVALL, HARRIET B. (1954)	Senior Librarian
TANNER, JESSIE R. (1936)	Associate Professor of Physical Education
WALKER, HILDE KRAMER (1951)	Assistant Professor of German

MEDICAL STAFF

FRANK O. ROBERTSON, M.D.	Director of Health Services
ROBERT W. VANCE, M.D.	Physician
* HAROLD G. CARTER, M.D.	Physician
* HARNEY M. CORDUA, M.D.	Physician
* O. S. HARBAUGH, M.D.	Physician
* ROBERT B. PAPPENFORT, M.D.	Physician
* CHARLES E. PRUETT, M.D.	Physician
* FRANCES M. WHITE, M.D.	Physician
IONA C. BARRETT, R.N.	Nurse
MARIAN E. MOUNT, R.N.	Nurse
LILLIAN OLSON, P.H.N.	Nurse
EULA RIEKE, R.N.	Nurse
MARILYNN M. THOMPSON, P.H.N.	Nurse

MAINTENANCE STAFF

TIMOTHY V. HALLAHAN, A.B.	Chief of Maintenance
CAREY D. FOLGER	Supervisor of Building Trades
FLOYD A. KIRKPATRICK	Supervising Custodian
STEPHEN W. REED	Supervising Groundsman
WALTER J. SMITH	Electrician
MYRLEN SOUTHWORTH	Plumber
KENNETH C. TAYLOR	Stationary Engineer

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* Serving part-time.

ADMINISTRATIVE OFFICE STAFF

SYLVIA R. ABEGGLEN	Intermediate Typist-Clerk, Registrar's Office
FRANCES ADAMS	Junior Typist-Clerk, Mimeograph Office
ANITA ALLEN	Junior Typist-Clerk, Registrar's Office
KATHLEEN B. ANDERSON	Secretary to Dean of Instruction
LETHA L. BALDWIN	Intermediate Account Clerk, Library
JANE C. BORDNER	Secretary to Chief of Maintenance
AURELI BOUTON	Senior Clerk, Business Office
LOIS A. BOYD	Senior Clerk, Business Office
NADINE BUSS	Intermediate Typist-Clerk, Business Office
GWENDOLYN CHICK, A.B.	Senior Typist-Clerk, Library
LOISENE J. COPELAND	Intermediate Stenographer-Clerk, Business Office
SHIRLEY MARIE DAVIS	Junior Stenographer-Clerk, Library
EVADNE T. DEARDORF	Assistant Registrar
GERTRUDE K. DICKINSON	Supervising Clerk, Business Office
CAROLYN B. ELLEDGE	Secretary, Fine Arts Division
MERLE H. EVERS	Secretary, Life Sciences Division
ALFREDA G. FERLIN	Office Appliance Operator, Mimeograph Office
JANE L. FERRIS	Secretary, Audio-Visual Services
BERKELEY A. FREEMAN	Secretary, Testing Office
ELEANOR C. FRITZ	Intermediate Stenographer-Clerk, Library
MAURINE A. GAY	Junior Typist-Clerk, Library
FRANK J. GOLOJUCH	Stock Clerk, Business Office
E. MAE HALLOCK	Secretary, Summer Sessions
GENEVIEVE M. HAMBLEN	Secretary, Personnel Services Center
BEVERLY HAMBLETON	Cashier-Clerk, Business Office
KATHLEEN B. HARRIS	Intermediate Stenographer-Clerk, Office of Executive Dean
ELIZABETH M. HARRISON	Book Repair Clerk, Library
BARBARA HIRTENSTEINER	Intermediate Typist-Clerk, Business Office
GEORGIA C. HOCHSTETLER, A.B.	Secretary, Campus Laboratory School
HELEN M. HOYLE, A.B.	Intermediate Typist-Clerk, Business Office
IRENE JANECK, A.B.	Secretary, Division of Physical Sciences
NEVADA A. JENIA, B.A.	Secretary, Division of Languages and Literature
PHYLLIS R. JOHNSON	Junior Typist-Clerk, Placement Office
BARBARA JOHNSTON	Intermediate Typist-Clerk, Admissions Office
PATRICIA KEMP	Secretary, Secondary Education
CONSTANCE KING, B.S.	Secretary to Associate Dean of Students, Activities
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